

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

SUBHASH MANNAVA, an individual,)	
)	Civil No. 21-cv-01303
Plaintiff,)	
)	Judge Matthew F. Kennelly
v.)	
)	Magistrate Judge M. David Weisman
TD AMERITRADE, INC., a New York)	
Corporation, <i>et al.</i> ,)	
)	
Defendants.)	

**DEFENDANT TD AMERITRADE, INC.’S MEMORANDUM IN SUPPORT OF ITS
MOTION TO DISMISS OR STAY AND COMPEL ARBITRATION**

I. INTRODUCTION

In his Verified Second Amended Complaint (“Complaint”), Plaintiff Subhash Mannava (“Plaintiff”) alleges, *inter alia*, that TD Ameritrade, Inc. (“TD Ameritrade” or “Defendant”) committed conversion (Count I) and violated the Illinois Consumer Fraud and Deceptive Business Practices Act (“ICFA”), 815 ILCS 505/1, *et. seq.* (Count II), and seeks a constructive trust (Count III) and an accounting (Count IV), based on TD Ameritrade’s allegedly flagging Plaintiff’s account with TD Ameritrade for fraud. This, Plaintiff contends, “forced” him “to withdraw his funds from TDA’s system and transfer[] his money to his BoA [Bank of America] account.” (Complaint, ¶¶ 13-18, 57.) Plaintiff takes issue with the fact that TD Ameritrade investigated Plaintiff’s potential fraud and claims that TD Ameritrade is denying Plaintiff access to the \$400 remaining in Plaintiff’s account with TD Ameritrade. (*Id.*, ¶¶ 19, 27, 31, 53, 54.)

Plaintiff signed an agreement with TD Ameritrade requiring that all controversies between them be arbitrated before the Financial Industry Regulatory Authority (“FINRA”).

Accordingly, Plaintiff is contractually required to arbitrate his claims, and this action must be dismissed, or stayed, with an order compelling Plaintiff to seek resolution of his claims against TD Ameritrade in arbitration.

II. BACKGROUND

Plaintiff opened an IRA TD Ameritrade account (“IRA Account”) in September 2020. (Declaration of Maryann Allen (“Allen Dec.”), attached hereto as Exhibit 1, at ¶¶ 5, 8, Exhibit 1-A (“IRA Account Application”), and Exhibit 1-B (“June 2020 Client Agreement”).)¹ At the time, Plaintiff executed an IRA Account Application in which he agreed to be bound by the terms and conditions of the client agreement governing his account, as then in effect, and as amended from time-to-time. (Ex. 1-A, IRA Account Application, at p. 3; Ex. 1-B, June 2020 Client Agreement, at p. 1).²

In November 2020, Plaintiff also opened a self-directed, individual TD Ameritrade account (“Individual Account,” and together with the IRA Account, the “Accounts”). (Allen Dec., at ¶¶ 9-10, Exhibit 1-C (“Individual Account Application”), and Exhibit 1-D (“October 2020 Client Agreement”).) In opening his Individual Account, Plaintiff signed another application and client agreement, in which he agreed to be bound by the terms and conditions of the client agreement governing his account, as then in effect, and as amended from time-to-time.

¹ Plaintiff’s IRA Account and Individual Account are collectively referred to herein as the “Accounts.” The June 2020 Client Agreement, October 2020 Client Agreement, and December 2020 Client Agreement are collectively referred to herein as the “Client Agreements.”

² The Client Agreements contain a provision whereby Plaintiff agreed that his “continued Account activity after [] amendment constitute[d Plaintiff’s] agreement to be bound by all amendments to the [Client Agreements] . . .” (Ex. 1-B, June 2020 Client Agreement, at § 14(e); Ex. 1-D, October 2020 Client Agreement, at § 14(e); Ex. 1-E, December 2020 Client Agreement, at § 14(e).) Plaintiff further agreed that the Client Agreements “survive[d] termination of the

(Ex. 1-C, Individual Account Application; Ex. 1-D, October 2020 Client Agreement, at p. 1.) TD Ameritrade amended the October 2020 Client Agreement in December 2020 (the “December 2020 Client Agreement”). The December 2020 Client Agreement remained in effect through March 2021. (Allen Dec., at ¶ 11, **Exhibit 1-E** (“December 2020 Client Agreement”).)

When Plaintiff opened his IRA Account, the IRA Account Application provided that “[t]he Client Agreement applicable to this brokerage account contains a predispute arbitration clause. By signing this agreement, the parties agree to be bound by the terms of the Client Agreement, including the arbitration agreement located in Section 12 of the Client Agreement on page 8.” (Ex. 1-A, IRA Account Application, at p. 3 (emphasis in original).) The Individual Account Application contains language substantially similar to that in the IRA Account Application. (Ex. 1-C, Individual Account Application, at p. 3.) Additionally, the Client Agreements each provided that:

I [Plaintiff] agree that any controversy between you [TD Ameritrade] and your affiliates, any of their respective officers, directors, employees, agents and me [Plaintiff] (including any of my officers, directors, employees, or agents) arising out of or relating to this Agreement, our relationship, any Services provided by you, or the use of the Services, and whether arising before or after the date of this Agreement, shall be arbitrated and conducted under the provisions of the Code of Arbitration of the FINRA . . .

(Ex. 1-B, June 2020 Client Agreement, § 12 (“ARBITRATION”); Ex. 1-D, October 2020 Client Agreement, § 12 (“ARBITRATION”); Ex. 1-E, December 2020 Client Agreement, § 12 (“ARBITRATION”) (emphasis in originals).) The forgoing terms of the Client Agreements did not change, were in effect during the entirety of Plaintiff’s relationship with TD Ameritrade, and

[Accounts].” (Ex. 1-B, June 2020 Client Agreement, at § 14(f); Ex. 1-D, October 2020 Client Agreement, at § 14(f); Ex. 1-E, December 2020 Client Agreement, at § 14(f).)

remain in effect. (Ex. 1-B, June 2020 Client Agreement, at § 14(f); Ex. 1-D, October 2020 Client Agreement, § 14(f); Ex. 1-E, December 2020 Client Agreement, at § 14(f).)

III. ARGUMENT

A. Legal Standard.

The Federal Arbitration Act (“FAA”) provides that arbitration clauses “shall be valid, irrevocable, and enforceable, save upon such grounds as exist at law or in equity for the revocation of any contract.” 9 U.S.C. § 2. The United States Supreme Court has recognized Section 2 of the FAA as “a congressional declaration of a liberal federal policy favoring arbitration agreements.” *Moses H. Cone Mem'l Hosp. v. Mercury Constr. Corp.*, 460 U.S. 1, 24-25 (1983). The purpose of the FAA is to “reverse the longstanding judicial hostility to arbitration agreements . . . and to place arbitration agreements upon the same footing as other contracts.” *Gilmer v. Interstate/Johnson Lane Corp.*, 500 U.S. 20, 24 (1991). Section 2 of the FAA “requires courts to enforce [arbitration] agreements . . . according to their terms.” *CompuCredit Corp. v. Greenwood*, 565 U.S. 95, 98 (2012) (citing *Dean Witter Reynolds, Inc. v. Byrd*, 470 U.S. 213, 221 (1985)); *see Biermann v. Comcast Cable Commc'ns Mgmt., LLC*, No. 20-cv- 2986, 2020 WL 6870824, *2 (N.D. Ill. Nov. 23, 2020) (Kennelly, J.) (granting motion to compel arbitration).

The FAA “leaves no place for the exercise of discretion by a district court, but instead mandates that district courts *shall* direct the parties to proceed to arbitration.” *Byrd*, 470 U.S. at 218 (emphasis in the original) (finding that “a court must compel arbitration of otherwise arbitrable claims, when a motion to compel arbitration is made” and reversing district court denial of motion to compel arbitration.) Indeed, the FAA creates a “presumption of arbitrability” and “any doubts concerning the scope of arbitrable issues should be resolved in favor of arbitration.” *AT&T Techs., Inc. v. Commc'ns Workers of Am.*, 475 U.S. 643, 650 (1986); *Moses*

H. Cone, 460 U.S. at 24-25 (1983); *Gore v. Alltell Commc'ns, LLC*, 666 F.3d 1027, 1034 (7th Cir. 2012).

The United States Supreme Court has repeatedly held that arbitration agreements are to be read liberally to effectuate their purpose. *See Moses*, 460 U.S. at 24; *Green Tree*, 531 U.S. at 91; *Mastrobuono v. Shearson Lehman Hutton*, 514 U.S. 52, 63 (1995); *Gilmer*, 500 U.S. at 24. As the United States Supreme Court specifically held in *Mastrobuono*, when a court interprets an arbitration provision, “due regard must be given to federal policy favoring arbitration, and ambiguities as to the scope of the arbitration clause must be resolved in favor of arbitration.” 514 U.S. at 62. Thus, a court should not deny arbitration “unless it may be said with positive assurance that the arbitration clause is not susceptible of an interpretation that covers the asserted dispute.” *AT&T*, 475 U.S. at 650 (concurring); *see also Zurich Am. Ins. Co. v. Watts Indus., Inc.*, 417 F.3d 682, 687 (7th Cir. 2005) (motion to compel must be granted where there is a “written agreement to arbitrate,” “a dispute within the scope of the arbitration agreement,” and “a refusal to arbitrate”).

The party resisting arbitration bears the burden of showing that the arbitration provision is invalid or does not encompass the claims at issue. *Green Tree Fin. Corp.-Ala v. Randolph*, 531 U.S. 79, 92 (2000).

B. Plaintiff's Claims Are Subject To Binding Arbitration.

Each of Plaintiff's claims against TD Ameritrade is arbitrable. TD Ameritrade's instant Motion should be granted because: (a) Plaintiff entered into the Client Agreements, agreeing to arbitrate “all controversies” between the parties; (b) by the broad terms of the arbitration agreement, all claims against TD Ameritrade in the Complaint are within the scope of the arbitration agreement; and (c) by filing his Complaint, and failing to respond to TD Ameritrade's

demand to arbitrate, Plaintiff has refused to arbitrate, notwithstanding his written agreement with TD Ameritrade to do so.

1. *The FAA applies and governs the Client Agreements.*

The FAA governs arbitration as required in Plaintiff's Client Agreements with TD Ameritrade. Under the FAA, "parties [to an arbitration agreement] are generally free to structure their arbitration agreements as they see fit" and may "specify by contract the rules under which that arbitration will be conducted." *Volt Info. Scis. v. Bd. of Trs. Of Leland Stanford Jr. Univ.*, 489 U.S. 468, 479 (1989).

The United States Supreme Court has held that the FAA reaches to the outer limits of Congress' power to regulate under the Commerce Clause. *Allied-Bruce Terminix Cos. v. Dobson*, 513 U.S. 265, 272-74 (1995). If a contract affects interstate commerce, or even if "in the aggregate the economic activity in question would represent a general practice . . . subject to federal control," the FAA applies. *Citizens Bank v. Alafabco, Inc.*, 539 U.S. 52, 57 (2003) (internal quotation marks omitted). "And this is so whether an agreement has a broad reach or goes just to one dispute, and whether enforcement be sought in state court or federal." *Id.* Transactions "involving commerce" include transactions "affecting commerce." *Allied-Bruce*, 513 U.S. at 268 (holding that 9 U.S.C. § 2 extends the FAA's reach to the limits of Congress' Commerce Clause power). A contract "evidencing a transaction involving commerce" means a transaction that in fact involved interstate commerce, even if the parties did not contemplate an interstate commerce connection. *Id.* at 281. In this case, the parties contemplated an interstate commerce connection regarding Plaintiff's Accounts. Plaintiff's Accounts with TD Ameritrade involve interstate parties and thus interstate commerce. Accordingly, the FAA applies and governs the Client Agreements and this Motion.

2. *There is a binding, written agreement to arbitrate that covers Plaintiff's claims in this action.*

The FAA provides that an arbitration provision “shall be valid, irrevocable, and enforceable, save upon such grounds as exist at law or in equity for the revocation of any contract.” 9 U.S.C. § 2. Courts have enforced the arbitration provision(s) in TD Ameritrade’s customer agreements. *See e.g., Harris v. TD Ameritrade, Inc. et al.*, No. 17-cv-6033 (LTS) (BCM), Dkt. No. 59, § II.B (S.D.N.Y. Aug. 15, 2018) (finding that arbitration should be compelled because TD Ameritrade’s customer agreements required arbitration of “all controversies”), *adopted* 338 F. Supp. 3d 170 (S.D.N.Y. 2018) (compelling arbitration of claims against TD Ameritrade). Courts also routinely enforce arbitration agreements between consumers and corporations under the FAA. *See Hill v. Gateway 2000, Inc.*, 105 F.3d 1147, 1151 (7th Cir. 1997) (enforcing arbitration clause contained in document packaged in box with computer); *see also Bank One, N.A. v. Coates*, 125 F. Supp. 2d 819, 831 (S.D. Miss. 2001) (enforcing arbitration agreement in credit card agreement); *Marsh v. First USA Bank, N.A.*, 103 F. Supp.2d 909, 916-19 (N.D. Tex. 2000) (same); *Stiles v. Home Cable Concepts, Inc.*, 994 F. Supp. 1410, 1416 994 F. Supp. 1410 (M.D. Ala. 1998) (same); *Herrington v. Union Planters Bank, N.A.*, 113 F. Supp.2d 1026, 1032 (S.D. Miss. 2000) (arbitration agreement in connection with use of bank accounts). This Court has also enforced arbitration provisions made available electronically or on a web page, even if not physically signed. *See e.g., Gorny v. Wayfair Inc.*, No. 18-cv-8259, 2019 WL 2409595, **5-6 (N.D. Ill. June 7, 2019) (Kennelly, J.).

Plaintiff entered into valid agreements with TD Ameritrade to arbitrate disputes regarding his Accounts. (Ex. 1-B, June 2020 Client Agreement, § 12; Ex. 1-D, October 2020 Client

Agreement, § 12; Ex. 1-E, December 2020 Client Agreement, § 12.) The Client Agreements provide that:

I [Plaintiff] agree that any controversy between you [TD Ameritrade] and your affiliates, any of their respective officers, directors, employees, agents and me [Plaintiff] (including any of my officers, directors, employees, or agents) arising out of or relating to this Agreement, our relationship, any Services provided by you, or the use of the Services, and whether arising before or after the date of this Agreement, shall be arbitrated and conducted under the provisions of the Code of Arbitration of the FINRA . . .

(*Id.* (emphasis in originals).)

Plaintiff should be compelled to arbitrate because the arbitration provisions in the Client Agreements cover all claims that relate to or arise out of the relationship between TD Ameritrade and Plaintiff. The Client Agreements' arbitration provisions broadly require arbitration, without qualification, of *all* controversies "arising out of or relating of" the relationship between Plaintiff and TD Ameritrade. (Ex. 1-B, June 2020 Client Agreement, § 12; Ex. 1-D, October 2020 Client Agreement, § 12; Ex. 1-E, December 2020 Client Agreement, § 12.) These arbitration provisions, then, do not apply solely to claims regarding Plaintiff's Accounts. Rather, by their plain language, they also apply to claims that stem broadly from the relationship between TD Ameritrade and Plaintiff. (*Id.*) This necessarily encompasses TD Ameritrade's flagging and investigation of Plaintiff's Accounts for fraud, any "reporting" TD Ameritrade allegedly did about Plaintiff's Accounts, or any other matter or "reporting" stemming from Plaintiff's relationship with TD Ameritrade. These are the claims raised in Plaintiff's Complaint. (Complaint, ¶¶ 15, 17, 19, 27, 28, 31.)

The "arising out of or relating to" language in the arbitration provisions of TD Ameritrade's Client Agreements is "extremely broad and capable of an expansive reach." *Kiefer Specialty Flooring, Inc. v. Tarkett, Inc.*, 174 F.3d 907, 909 (7th Cir. 1999); *Gorny*, 2019 WL

2409595, at *3 (Kennelly, J.) (granting motion to compel arbitration); *Penn. Chiropractic Ass'n v. Blue Cross Blue Shield Ass'n*, 713 F. Supp. 2d 734, 739 (N.D. Ill. 2010) (Kennelly, J.) (“The Seventh Circuit has held that arbitration clauses that contain [arising out of or relating to] language are ‘broad’ and ‘necessarily create presumption of arbitrability.’”).

Plaintiff’s claims in this case thus fall squarely within the scope of the broad arbitration provisions to which Plaintiff agreed. *See Falbe v. Dell, Inc.*, No. 04-cv-1425, 2004 WL 1588243, **2, 5 (N.D. Ill. July 14, 2004) (finding arbitration clause broad enough to encompass all of plaintiff’s claims, including statutory ICFA claim); *Griggs v. MBNA Corp.*, No. 02-cv-4088, 2002 WL 32309983, *2 (S.D. Ill. Oct. 16, 2002) (same). Yet the filing of Plaintiff’s lawsuit signals a refusal to arbitrate. Prior to filing this Motion, counsel for TD Ameritrade sent Plaintiff’s counsel copies of the exhibits to the Motion and requested dismissal or a stipulation to arbitrate; Plaintiff’s counsel failed to respond to the request. Nonetheless, Plaintiff should be compelled to arbitrate.

3. *Plaintiff is required to arbitrate his claims against TD Ameritrade even if the other defendants cannot be compelled to participate in arbitration.*

Plaintiff is required to arbitrate his dispute with TD Ameritrade even though he has asserted claims against other parties. It is well-settled that the existence of other potential defendants not subject to the same duty to arbitrate is no bar to enforcing an arbitration clause as written. *Moses*, 460 U.S. at 2-3 (“The fact that . . . petitioner will be forced to resolve the dispute with respondent and the related dispute with the architect in different forums . . . occurs because the relevant federal law, the Arbitration Act, requires piecemeal resolution when necessary to give effect to an arbitration agreement.”); *We Care Hair Dev., Inc. v. Engen*, 180 F.3d 838, 842 (7th Cir. 1999) (“As the Supreme Court has held, piecemeal resolution may be required ‘when

necessary to give effect to an arbitration agreement.””) (citations omitted); *Byrd*, 470 U.S. at 221 (1985) (“The preeminent concern of Congress in passing the [Federal Arbitration Act] was to enforce private agreements into which parties had entered, and that concern requires that we rigorously enforce agreements to arbitrate, even if the result is ‘piecemeal’ litigation . . .”). Even if the other defendants cannot be joined to arbitration, dismissing or staying Plaintiff’s claims against TD Ameritrade and compelling arbitration is appropriate and warranted.

B. The Court Should Dismiss, or in the Alternative, Stay the Litigation as to TD Ameritrade.

Dismissal of a claim is favored when a claim is subject to arbitration. *See Johnson v. Orkin, LLC*, 928 F. Supp. 2d 989, 1008-09 (N.D. Ill. 2013) (collecting cases); *see also Benzemann v. Citibank N.A.*, 622 Fed. Appx. 16, 18 (2d Cir. 2015). When it is clear that a claim will be resolved in the arbitration, retaining jurisdiction and staying the action will only “serve to waste judicial resources.” *Johnson*, 928 F. Supp. 2d at 1009. Thus, the claims asserted against TD Ameritrade should be dismissed.

In the alternative, the action should be stayed pending arbitration. *See e.g., Morgan v. Sears Hldgs. Mgmt. Corp.*, No. 16-cv-6871, 2017 WL 878732, *5 (N.D. Ill. Mar. 6, 2017) (staying litigation and compelling arbitration); *Tarrson v. BLC Partners, LP*, No. 01-cv-7761, 2002 WL 31095174, n.3 (N.D. Ill. Sept. 18, 2002).

IV. CONCLUSION

For the foregoing reasons, Defendant TD Ameritrade, Inc. requests that this Court compel Plaintiff Subhash Mannava to pursue his claims against TD Ameritrade in arbitration, that litigation of the claim before this Court be dismissed, that discovery be stayed as to TD Ameritrade pending the Court’s decision on this Motion, and any other relief this Court deems appropriate.

Dated: August 9, 2021

Respectfully submitted,

TD AMERITRADE, INC.

By: /s/ Demetria L. Hamilton

Lauren J. Caisman

Demetria L. Hamilton

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*ATTORNEYS FOR DEFENDANT TD
AMERITRADE, INC.*

EXHIBIT

1

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

SUBHASH MANNAVA, an individual,)
Plaintiff,) Civil No. 21-cv-01303
v.) Judge Matthew F. Kennelly
TD AMERITRADE, INC., a New York) Magistrate Judge M. David Weisman
Corporation, et al.,)
Defendants.)

DECLARATION OF MARYANN ALLEN

I, Maryann Allen, declare under penalty of perjury as follows:

1. I am a Senior Paralegal for TD Ameritrade, Inc. ("TD Ameritrade"). I submit this Declaration in support of TD Ameritrade's Motion to Dismiss or Stay and Compel Arbitration (the "Motion") in the above-captioned case. I am over the age of eighteen years and am duly authorized to make this Declaration on behalf of TD Ameritrade. If called as a witness, I would testify competently to the facts set forth in this Declaration.

2. The statements set forth in this Declaration are true and correct to the best of my knowledge and information. Except where based upon information provided by persons working under my direction and supervision or based upon TD Ameritrade's business records, the statements herein are based upon my personal knowledge or review of TD Ameritrade's business records, including records pertaining to Plaintiff's Accounts.¹

3. In connection with my employment for TD Ameritrade, I have personal knowledge of the general business practices of TD Ameritrade and/or its affiliates with respect

¹ Capitalized terms not defined herein shall have the meaning as set forth in TD Ameritrade's Motion.

to individual and IRA accounts. I have access to, and am familiar with, the business records relating to the accounts opened with TD Ameritrade, and in particular, the records of Plaintiff's Accounts and the applicable Client Agreements.

4. The exhibits to this Declaration are all true and correct copies of business records created by TD Ameritrade and maintained by TD Ameritrade in the course of regularly conducted business activity as part of the regular practice of TD Ameritrade to create and maintain such records. The exhibits to this Declaration were also made at the time of the act, transaction, occurrence, or event, or within a reasonable time thereafter. I have reviewed and am familiar with TD Ameritrade's business records concerning Plaintiff's Accounts. Certain of the exhibits have been redacted to protect personally identifying information.

5. TD Ameritrade's records reflect that, on September 1, 2020, Plaintiff submitted an application for an IRA Account with TD Ameritrade through its online account opening process. Attached hereto as Exhibit 1-A is a true and correct copy of the IRA Account Application executed by Plaintiff when he opened his IRA Account with TD Ameritrade (with redactions to protect personal information).

6. As part of its online account opening process, TD Ameritrade asks customers whether they agree to an arbitration agreement contained in the TD Ameritrade Client Agreement requiring arbitration of any controversy or claim arising out of or related to their account. The applicable Client Agreement is made available electronically.

7. I have reviewed information pertaining to Plaintiff's Accounts retrieved from TD Ameritrade's electronic system and confirmed that Plaintiff opened his Accounts through TD Ameritrade's online accounting opening process, and that he clicked "I Agree" when asked whether he agreed to the arbitration agreement contained in his Client Agreements.

8. Attached hereto as Exhibit 1-B is a true and correct copy of TD Ameritrade's Client Agreement in effect at the time Plaintiff applied for and opened his IRA Account with TD Ameritrade in September 2020.

9. TD Ameritrade's records reflect that, on November 5, 2020, Plaintiff submitted an application for an Individual Account with TD Ameritrade through TD Ameritrade's online account opening process. Attached hereto as Exhibit 1-C is a true and correct copy of the account application executed by Plaintiff when he opened his Individual Account with TD Ameritrade (with redactions to protect personal information).

10. Attached hereto as Exhibit 1-D is a true and correct copy of TD Ameritrade's Client Agreement in effect at the time Plaintiff applied for his Individual Account with TD Ameritrade in November 2020.

11. Attached hereto as Exhibit 1-E is a true and correct copy of TD Ameritrade's Client Agreement that went in effect on December 7, 2020. That Client Agreement remained in effect through March 2021.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct.

Executed on: 08/04/2021

By: Maryann Allen

Name: Maryann Allen
Title: Senior Paralegal
TD AMERITRADE, INC.

EXHIBIT

1-A



Archive Record

Account type Traditional IRA
Account number [REDACTED] 8518
Date 09/01/2020
Do you already have an account with us? No

Contact information

Full name Subhashchandra Babu Mannava
Email you use regularly mannavascb@gmail.com

Personal information

Home address 3424 Empress Dr
Naperville IL 60564-1166
UNITED STATES
Daytime phone number [REDACTED]
Date of birth [REDACTED]
Are you a U.S. citizen? Yes
Are you also a citizen of another country? No
Social Security Number or ITIN [REDACTED] 0866
How do you plan to use this account Invest in and trade stocks, options, ETFs, bonds, and/or mutual funds.

I have read the TD Ameritrade Privacy Statement.

Financial information

Employment status UNEMPLOYED
Annual income \$ [REDACTED]
Net worth \$ [REDACTED]
Liquid net worth \$ [REDACTED]
Sweep of uninvested cash FDIC-insured deposit account(s)
Source of funds for initial deposit Savings
Source of funds for ongoing deposits Employment wages
Are you, or is your spouse, or is any member of your immediate family living in the same household licensed by, employed by, or associated with a broker-dealer firm, a financial services regulator, a securities exchange, or a No

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member of a securities

exchange?

Are you, or is your spouse, or No
is any member of your
immediate family a member of
the board of directors, a 10%
shareholder, or a policy-
making officer of a publicly
traded company?

Electronic delivery of documents

- Client Relationship Summary (TDA101313)
- Client Agreement (AMTD182)
- Account Handbook (TDA066)
- Business Continuity Plan Statement (AMTD5491)
- TD Ameritrade Privacy Statement (AMTD800)
- Individual Retirement Custodial Account Agreement (AMTD6102)

You'll receive these documents in an email after your account is opened. They're also available after you log in to your account at Client Services > Forms & Agreements.

I, Subhashchandra Babu Mannava, accept electronic delivery of these documents and do not need them mailed to me.

IRS Form W-9 Certifications

Under penalty of perjury, I, Subhashchandra Babu Mannava, certify that:

- 352060866 is my correct taxpayer identification number
- I am not subject to backup withholding (I agree)
- I am a U.S. citizen or other U.S. person
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct

You must select "I disagree" above if you have been notified by the IRS that you are subject to backup withholding because you have failed to report all interest and dividends on your tax return.

The IRS does not require your consent to any provision of this document other than the certifications required to avoid backup withholding.

I, Subhashchandra Babu Mannava, certify the accuracy of the IRS Form W-9 statements above.

Client Agreement

Before we can open your account, you must read and electronically sign the TD Ameritrade Client Agreement and Individual Retirement Custodial Account Agreement. If you do not agree with the Client Agreement and Individual Retirement Custodial Account Agreement or find any part of these agreements unacceptable, you shouldn't open your account at this time.

By checking the box below, I represent that:

- I am the person identified in this account
- I am accepting and agreeing to abide by all of the Client Agreement and Individual

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Retirement Custodial Account Agreement

- I am electronically signing these documents which will have the same effect as the execution of these documents by a written signature
- I am consenting to the electronic delivery of all information relating to my account, including statements, confirmations, and other regulatory documents. I will receive shareholder information electronically when available
- If I am a nonresident alien, I have "earned income" actually and actively earned within the United States

The Client Agreement applicable to this brokerage account contains a predispute arbitration clause. By signing this agreement, the parties agree to be bound by the terms of the Client Agreement, including the arbitration agreement located in Section 12 of the Client Agreement on page 8.

I, Subhashchandra Babu Mannava, agree to the terms of the Client Agreement.

Electronically signed by: Subhashchandra Babu Mannava

Date submitted: 2020-09-01 01:34:45 AM CDT

Principal name: Valiere Simpson

EXHIBIT

1-B



Client Agreement

PO Box 2760 ■ Omaha, NE 68103-2760
 Fax: 866-468-6268

1. INTRODUCTION

This Agreement governs all brokerage accounts that I open with you, all transactions in my Account, the use of your websites, the Brokerage Services, the TD Ameritrade Content, and the Third-Party Content; is binding on my heirs, executors, administrators, successors, and assigns; and will inure to the benefit of your successors. By opening an Account with you, I acknowledge that I have received, read, and understand this Agreement and agree to be bound by its terms. Accounts opened with the TD Ameritrade Institutional Division are governed by a separate agreement.

I, "me," "my," or "account owner" means each account owner who signs the Account Application. "You," "Your," or "TD Ameritrade" means TD Ameritrade, Inc., a wholly owned subsidiary of TD Ameritrade Holding Corporation, and, when applicable, TD Ameritrade Clearing, Inc. ("Clearing"), TD Ameritrade's clearing broker-dealer.

2. DEFINITIONS

Account means each brokerage account I open with you or have an interest in.

Agreement means these terms and conditions as well as any supplemental agreements and disclosures that apply to my Account, as amended from time to time.

Applicable Rules means all applicable federal and state laws, rules and regulations, rules of any self-regulatory organization, and the constitution and applicable rules, regulations, customs, and usages of the exchange or market and its clearinghouse.

Brokerage Services means your website and related services that you provide other than TD Ameritrade Content, which I need to place trades in my Account.

Business Day means Monday through Friday, excluding market holidays.

Services means, collectively, the websites, the Brokerage Services, the TD Ameritrade Content, and the Third-Party Content. This Agreement applies to the Services provided by you regardless of how I access them (for example, in person, phone, Internet, or by mobile device).

TD Ameritrade Content means all information, tools, and services available on your website, other than Brokerage Services provided by you, and not by a third party.

Third-Party Content means all information, tools, and services available on your website that are provided by a third party ("Third-Party Provider"), including financial and investment tools, market data, reports, alerts, calculators, access to online conferences, telecasts, bulletin boards, tax preparation, or account management tools.

websites means the Internet sites of TD Ameritrade, whose domain name is registered as <http://www.tdameritrade.com>, and others, and through which you offer Services.

3. MY ACCOUNT AND RELATIONSHIP WITH YOU

a. Self-Directed Account. I understand that Accounts opened with you are self-directed. I am responsible for all purchase and sell orders, decisions to continue with an investment strategy or to hold an investment, and instructions placed in my Account. Unless you provide advice to me that is clearly identified by you as an individualized recommendation for me, any investment decision that I make or investment strategy that I utilize, including the decision to hold any and all of the securities or derivatives in the Account, is based on my own investment decisions or those of my agent and is at my own risk. All investments involve risk, and unless you provide individualized recommendations to me, I or my agent are responsible for determining the suitability of any trade, investment, investment strategy, and risk associated with my investments. TD Ameritrade Content or Third-Party Content I access through you does not constitute a recommendation to invest in any security or derivative, or to utilize any investment strategy.

b. Fees and Commissions. I will pay commissions, charges, taxes, and other fees applicable to my Account. Current commission pricing and other fees are on the websites. You may change your fees and commissions at any time by posting changes on the websites or by other means.

You reserve the right to vary commissions among clients in connection with special offers or combinations of services or in other circumstances. You or Clearing may pay a portion of the revenues or fees derived from servicing my Account to third parties that provide services to you or Clearing. If my Account is an IRA or other retirement plan account, my Account may be charged fees that the particular plan has authorized to be paid to service providers other than you or Clearing.

c. Statements and Confirmations. It is my obligation to review trade confirmations and Account statements promptly upon receipt. These documents will be considered binding on me unless I notify you of any objections within five days from the date confirmations are sent and within 10 days after Account statements are sent.

d. Instructions.

1. General. You may accept and act on instructions from me, my agent, or any person authorized on my Account. You may refuse any order, or delay placing any order, if you determine that an order requires clarification from me. I will not hold you responsible for any losses caused by the rejection or delay. You will not receive any order or instruction transmitted by my agent or me until you have actual knowledge of the order or instruction. You do not determine the validity of my agent's status or capacity, the appropriateness of, or the authority or actions by such person.

2. Wire Transfers. By initiating a wire transfer from my Account with or without a letter of instruction, I agree that you may use security procedures for accepting and acting upon wire transfer instructions. I agree that such security procedures may include one, some, or all of the following, depending on the type, amount, and frequency of the wire transfer request: requestor and/or account owner identification and verification; requestor and/or account owner signature comparison or verification; confirmation of receiving bank and/or account designation; notice provided via email, message center, or phone to account owner and/or authorized agent; account surveillance and/or trending analysis. In some circumstances, you may place limits on the portability of funds and additional documentation may be required.

I agree that the above security procedures are commercially reasonable under the circumstances. I agree to be bound by instructions to initiate a wire transfer, with or without a letter of instruction, whether in fact authorized or unauthorized, which you implement in compliance with these procedures, unless I have given you prior notice of possible unauthorized activity in my Account and you have a reasonable opportunity to act on such notice.

3. ACH Transactions. From time to time, originators that I authorize may send ACH credits or debits to my account. For each ACH transaction, I agree it is subject to the NACHA Operating Rules and Guidelines or other funds transfer system rules as applicable, and that the following additional terms shall apply: (1) TD Ameritrade's payment of a funds transfer to my account will be provisional until TD Ameritrade receives final settlement or payment, and I agree that TD Ameritrade may reverse the provisional credit and/or obtain reimbursement from me if you do not receive final settlement or payment; (2) A payment by the beneficiary's bank of a funds transfer from my account to the beneficiary will be provisional until final settlement has been made or until payment is considered received under applicable law, and I agree that the beneficiary's bank may reverse its provisional credit and obtain a refund from the beneficiary and I, as the originator of the payment, will not be considered to have paid the beneficiary; (3) I hereby authorize any Originating Depository Financial Institution (ODFI) to initiate, pursuant to ACH operating rules, ACH debit entries to my account for electronic presentation or re-presentation of items written or authorized by me; and (4) If I receive an unauthorized debit, I will need to file a written unauthorized debit statement with TD Ameritrade by contacting TD Ameritrade at 1-800-669-3900

e. No Endorsement of Day Trading Strategy. You do not recommend, endorse, or promote a "day trading" strategy, which may involve significant financial risk to me.

f. Clearing Agreement. You and Clearing have entered into a clearing agreement in which Clearing is the clearing agent for securities transactions for your clients. You transmit client instructions to Clearing which causes such instructions to be executed. Clearing carries my Account on a fully disclosed basis. All securities, dividends, and proceeds will be held at Clearing unless otherwise instructed.

g. Account Protection. You are a member of the Securities Investor Protection Corporation ("SIPC"), which protects securities customers of its members up to \$500,000 (including \$250,000 for claims for cash). An explanatory brochure is available on request at sipc.org. Additionally, you provide each client \$149.5 million worth of protection for securities and \$2 million of protection for cash through supplemental coverage provided by London insurers. In the event of a brokerage insolvency, a client may receive amounts due from the trustee in bankruptcy and then SIPC. Supplemental coverage is paid out after the trustee and SIPC payouts and under such coverage each client is limited to a combined return of \$152 million from a trustee, SIPC, and London insurers. The TD Ameritrade supplemental coverage has an aggregate limit of \$500 million over all customers. This policy provides coverage following brokerage insolvency and does not protect against loss in market value of the securities.

To obtain information about the SIPC, including the SIPC brochure, I can contact the SIPC at:

Securities Investor Protection Corporation
805 15th St, N.W., Suite 800
Washington, D.C. 20005-2215

Tel: 202-371-8300
Fax: 202-371-6728
Email: askspc@sipc.org
Website: sipc.org

h. Beneficiary Designation. Changes in the relationship between the account owner and designated beneficiary (such as, marriage, divorce, or adoption) will not automatically add or revoke beneficiary designations. For example, if an account owner designated a spouse as beneficiary and they subsequently divorced, the former spouse will remain beneficiary on the Account unless the account owner submits a new beneficiary designation to you.

i. Compliance with Laws. I agree to comply with all laws, rules, and regulations applicable to my Account.

4. ABOUT ME

a. Legal Capacity. I am of legal age in the jurisdiction in which I reside and have the capacity and authority to enter into this Agreement.

b. Accuracy of Information. All the information I provide you is true and correct. I will promptly notify you in writing within 10 Business Days after any change in such information. You may rely upon all information I provide you.

c. Interest in Account. I represent that no one except me (us) has an interest in any of my (our) Account(s) (unless I am opening the Account as a fiduciary).

d. Multiple Owners. If there is more than one Account owner, then the provisions of the Agreement apply to each owner. Accounts of husbands and wives in community property states will be held in the name of husband and wife as community property unless we instruct you otherwise; any other Joint Account will be held jointly with rights of survivorship unless I notify you of a different form of ownership and provide such documentation as you require. You will have no liability for any loss that may arise due to taking instructions from one owner or requiring instructions from all owners. If I am married, I may establish an account with my spouse as tenants by entirety. I will notify you if I become legally divorced.

e. Rights, Terms, and Obligations of Securities in Account. Except as required by Applicable Rules, you are not obligated to notify me of any events involving my securities positions, nor do you have the responsibility to take any actions on my behalf with respect to such events without specific instructions from me. I am responsible for knowing the rights, terms, and obligations of securities in my Account and for monitoring the occurrence of any events involving my securities positions or securities for which I intend to place an order.

5. PRIVACY AND CONFIDENTIALITY

a. Privacy. You will take reasonable measures to protect the privacy and confidentiality of information in your possession about my Account and me. Your Privacy Statement explains how you collect and protect my information. The Privacy Statement is incorporated into this Agreement by reference.

b. Account Number, PIN, or Password. I will receive a password and/or access number (collectively "PINs") that provides electronic access to my Account. Account numbers, User IDs, and PINs are confidential, and I am responsible for the confidentiality, protection, and use of them. Subject to the TD Ameritrade Asset Protection Guarantee, I agree to be responsible for all activities in my Account. You may be assured that I have authorized any orders or instructions that are received under my Account number and PIN or by initiating an electronic transfer of funds, with or without a letter of instruction.

c. TD Ameritrade Asset Protection Guarantee. If I lose cash or securities from my Account due to unauthorized activity, you will reimburse me for the cash or securities I lose. You promise me this protection if unauthorized activity causes losses and you determine it was through no fault of my own. You promise this protection if I do four things: (1) keep my personal identifying information and Account information secure and confidential—because sharing my User ID, password, PIN, Account number, or other standard means of authentication with other people means I authorize them to take action in my Account;

(2) keep my contact information up-to-date with you, so that you can contact me in case of suspected fraud; (3) review my Account frequently and my statements promptly and report any suspicious or unauthorized activity to you immediately in accordance with this Agreement; and (4) take the actions you request and cooperate with any investigation. I agree that unauthorized activity does not include any actions or transactions undertaken by or at the request of me, my investment advisors or family members, or anyone else whom I have allowed access to my Account or to my Account information for any purpose, such as trading securities, writing checks, or making withdrawals or transfers.

d. Phone Conversations and Electronic Communications. You may record and monitor any telephone, video, or electronic communications with me.

e. Credit Reports. I authorize you to request my credit reports to verify my creditworthiness and to provide information to credit agencies. Upon request, you will inform me whether a report was requested and provide me with the name and address of the credit-reporting agency that furnished the report. Negative credit information may be submitted to a credit-reporting agency if I fail to fulfill the terms of my credit obligations.

f. Disclosure of Account Information to Third Parties. Consistent with your Privacy Statement, you and your agents are specifically authorized to disclose information about my Accounts and me to third parties.

g. Trusted Contact Authorization. If I elect to provide Trusted Contact information to you, you are authorized to communicate, verbally and in writing, with the Trusted Contact Person(s) named on the applicable Trusted Contact Authorization Form, or by other such means as I may provide Trusted Contact information to you. I understand that any communication with the Trusted Contact Person(s) may include information about any of the Account Owners, the account for which the Trusted Contact information was provided, any other accounts at TD Ameritrade in which any of the Account Owners has an interest, or any other information the Account Owners may have provided to TD Ameritrade.

I understand that you may contact the Trusted Contact Person(s) for the following reasons: (1) if there are questions or concerns about my whereabouts or health status; (2) if you suspect that I may be a victim of fraud or financial exploitation; (3) if you suspect that I might no longer be able to handle my financial affairs; (4) to confirm the identity of any legal guardian, executor, trustee, authorized trader, or holder of a power of attorney; or (5) if you have any other concerns or are unable to contact me about my Account(s) held with you. If my Account is an Entity or other Non-natural person Account, you may also contact any Authorized Agent named on the Account for the foregoing reasons.

I further agree that: (1) the Trusted Contact Authorization does not impose any obligation that you communicate with my Trusted Contact Person(s); (2) the Trusted Contact Authorization does not authorize the Trusted Contact Person(s) to make any investment decisions or transact any business with you on my behalf; (3) the Trusted Contact Authorization is optional and I may change or withdraw it at any time by notifying you in writing; (4) all named Trusted Contact Person(s) are 18 years of age or older; (5) if there are multiple Account Owners, you are authorized to follow the instructions of any one or more Account Owners in adding a Trusted Contact, and you will not be held liable for information shared with a Trusted Contact, without regard to which Account Owner(s) authorized the addition of the Trusted Contact; and (6) you are released and discharged from all claims, causes of action, damages, losses, expenses, costs, and liabilities of any kind that may arise out of, relate to, or are in connection with the release of, or failure to release, personal and/or account information to the Trusted Contact Person(s).

6. CLIENT COMMUNICATIONS

a. Addresses. You may send communications to the mailing address, email, telephone number, or facsimile number that I provide. You also may deliver information verbally or via the Secure Message Center on your website. Communications shall be deemed delivered to me whether or not I actually receive them.

b. Electronic Signatures. My use of electronic signatures to sign your documents legally binds me in the same manner as if I had manually signed. The use of an electronic version of these documents fully satisfies any requirement that they be provided to me in writing. If I sign electronically, I represent that I have the ability to access and retain a record of the documents. I am responsible for understanding these documents and agree to conduct business with you by electronic means. I am obliged to review periodically the websites for changes or modifications.

c. Consent. By consenting to the electronic delivery of all information relating to my Account, I authorize you to deliver all communications to me by the following means: (1) by email at the email address specified by me; (2) by posting the communication on the websites or other sites on the Internet where the communication can be read and printed; (3) by sending me an email that includes a hyperlink to the websites or an address on the Internet where the information is posted, and can be read and printed; and (4) by sending me a notice that directs me to an address on the Internet or a place within the websites where the communication is posted and from which it can be read and printed. Such delivery will be an effective delivery to me for the purpose of any Applicable Rules whether or not I access or review the communication. Although I consent to electronic delivery, you may elect to deliver communications by other means which shall not affect my consent. I will notify you of any change in my address. I may revoke my consent to electronic delivery of communications and receive documents on paper. You have a reasonable period to effect such a change and may charge a reasonable fee for sending paper copies.

d. Equipment. If I agree to electronic delivery, I must have a computer with Internet access, an email address, and the ability to download and save or print communications to retain for my records. I am responsible for obtaining and maintaining all equipment and services required for online access of my Account.

7. ELECTRONIC SERVICES

a. Availability. You do not guarantee that any media will be available to me at a particular time. Access to the websites may be limited or unavailable during periods of peak demand, market volatility, system upgrades, or other reasons.

You reserve the right to suspend and deny access to the Services, without prior notice or for any reason. I recognize that Account activity may be conducted through several different media (for example, Interactive Voice Response phone system [IVR] and phone); and if a certain medium is not available, I will use another medium to conduct Account activity. You will not be liable for the unavailability, delay, or failure of any of the media at any particular time or for the accessibility of, transmission quality, outages to, or malfunction of any telephone circuits, computer system, or software.

b. Use of Services. I will use the Services for lawful purposes, for my personal and noncommercial use, and as permitted by this Agreement. I will not transmit through the websites any material that violates or infringes in any way upon the rights of others or would encourage conduct that may give rise to civil or criminal liability. I will not modify, copy, publish, transmit, license, participate in the transfer or sale of, reproduce, create derivative works from, distribute, redistribute, display, or in any way exploit the Services. I will not upload, post, decompile, reverse engineer, disassemble, modify, copy, distribute, transmit, reproduce, republish, license, display, sell or transfer, or create derivative products from the Services. Software accessed on the websites is subject to U.S. export controls and may not be downloaded by any person prohibited from doing so by Applicable Rules.

I may download software on a single computer for personal, noncommercial use, provided I keep intact all copyright and other proprietary notices. You and Third-Party Providers reserve the right to revise, modify, change, upgrade, suspend, impose limitations or restrictions on, deny access to, remove, or discontinue the Services at any time without prior notice. Third-Party Providers may enforce this Agreement against me and take action against me for my breach of this Agreement.

c. Limitation of Liability. The Services are provided "as is" and "as available." You, your affiliates, the Third-Party Providers and their respective licensors, employees, distributors, or agents make no representations with respect to the system and expressly disclaim all warranties. Subject to Applicable Rules, in no event will you, your affiliates, the Third-Party Providers or their respective licensors, employees, distributors, or agents be liable to me or any third party for any direct, indirect, incidental, special, punitive, or consequential losses or damages of any kind with respect to the Services.

I am solely responsible for my investment research, and neither you nor any Third-Party Provider make any representations, warranties, or other guarantees as to the accuracy or timeliness of any market data; nor do you or any Third-Party Provider make any representations, warranties, or other guarantees as to the present or future value or suitability of any sale, trade, or other transaction involving any particular security or any other investment.

d. Intellectual Property. My use of the Services will not confer any title, ownership interest, or intellectual property rights to me. The Services are protected under U.S. patent, copyright laws, international treaties or conventions and other laws, and will remain the exclusive property of you or Third-Party Providers. Company names, logos, and all related product and service names, design marks, and slogans of you or your affiliates or any Third-Party Provider are the property of the respective company. I am not authorized to use any such name or mark in any advertising, for publicity, or in any other commercial manner.

e. Cookies. You use cookies on websites and my browser will need to accept all cookies for it to perform fully. Certain features of the websites may also require the acceptance of cookies.

f. Hyperlinks. The websites may include hyperlinks to websites, owned or operated by affiliated or unaffiliated third parties. Neither you nor Third-Party Providers are responsible for the content or availability of such other websites, and shall not be responsible or liable for any loss in connection with reliance on such sites.

8. BROKERAGE SERVICES

a. Order Routing and Executions. Unless I specify the market for execution, you decide where to route my orders for execution. You consider a wide variety of factors in determining where to direct my orders, such as execution price, opportunities for price improvement (which is when an order is executed at a price that is more favorable than the displayed national best bid or offer), market depth, order size and trading characteristics of the security, efficient and reliable order handling systems and market center service levels, speed, efficiency, accuracy of executions, and the cost of executing orders at a market. If I instruct you to route my order to a particular market for execution ("Direct Routing"), and you accept my order and instruction, you are not required to make a best execution determination beyond executing the order promptly and in accordance with the terms of my order. Instructions to direct my order to certain market centers could incur additional fees.

b. Deposit and Order Refusal; Account Restrictions. You reserve the right not to accept the deposit of funds or particular securities into my Account and may refuse any of my orders. You also reserve the right to place trading, disbursement, and other restrictions on my Account. You may restrict my Account from withdrawals or trading if there is a reasonable suspicion of fraud, diminished capacity, inappropriate activity, or if you receive reasonable notice that the ownership of some or all of the assets in my Account is in dispute. I will not hold you liable for any loss I may incur due to your refusal to permit any deposit, withdrawal, or transaction.

c. Trade Execution and Price. You route orders to markets for prompt execution in view of prevailing market conditions, but there can be delays in the processing of orders. I understand and agree with the following:

- The quoted price may not reflect the trading activity from all markets.
- High volumes of trading at the market open or intraday may cause delays in executions and result in prices significantly different from the price quoted at the time the order was entered.
- Markets may handle orders manually and may reduce size guarantees during periods of volatility, resulting in possible delays in order execution, and losses.
- The execution price I receive may be impacted by numerous factors beyond your control and responsibility, including the type of security, liquidity, and the size of my order. For example, large or "block" orders or orders involving illiquid securities may take additional time to execute and may execute at prices significantly different from the quoted price.
- The execution of market and stop-market orders may be at a price significantly different from the quoted price of that security. Limit orders will be executed only at a specified price or better, but there is the possibility that the order will not be executed.
- Securities traded in over-the-counter bulletin board and pink sheet securities and other thinly traded securities present particular trading risks in that they are often more volatile and generally less liquid than securities traded on exchanges. You reserve the right to place restrictions on the trading of such securities without prior notice.
- I may suffer market losses during periods of volatility in the price and volume of a particular stock when systems issues result in an inability to place buy or sell orders.

d. Payment for Order Flow. You may receive remuneration from markets for directing orders to them. The source and amount of these payments are available upon written request. Markets may act as principals to buy, sell or hold securities for their own accounts, and they may make money when executing your trade.

e. Payment for Transactions. All orders that I authorize will be processed with the understanding that I will pay for any purchase and deliver certificates to cover all sales on or before the settlement date. All sell orders that I place will be for securities that I own ("long") and in deliverable form at the time I place the order, unless I inform you otherwise.

You reserve the right to require full payment, or an acceptable equity deposit, prior to the acceptance of any order. I will have the required cash, available funds, or equity in my Account prior to the execution and/or settlement of a purchase or short sale transaction, and the required securities in my Account prior to the execution and/or settlement of a long sale. If I do not have sufficient funds or securities in my Account, you have the right to liquidate or buy in securities at my expense, and I will be responsible for any cost or loss.

f. Payment of Indebtedness Upon Demand. If I incur and indebtedness in an account held with one of your affiliates, such as TD Ameritrade Futures & Forex LLC, I understand and acknowledge that you and your affiliates may decide to transfer my indebtedness to my Account. Subject to Applicable Law, I will be liable for the payment upon your demand of any obligations owing in my Account, including the reasonable costs incurred in collecting such amounts.

g. Security for Indebtedness. I consent to you having a continuing security interest in, right of set-off to and lien on all securities, cash, investment property, and other property in my Account ("Collateral"). Subject to Applicable Rules, and without prior notice to me, you may sell or transfer the Collateral to satisfy my obligations. You also have the discretion to determine which securities and other properties are to be sold and which contracts are to be closed. You have all the rights of a secured party under the Uniform Commercial Code.

h. Short Sales. I will designate any sell order as a "short" sale if at the time I place the order I do not own the security I intend to sell or am unable to deliver the security before settlement. All short sales will be executed in a Margin Account.

i. Mutual Funds and ETFs. I authorize you to custody mutual fund holdings that I purchase directly through you. When purchasing a mutual fund, I acknowledge that I have received and read the fund prospectus. Mutual fund purchases may be subject to investment minimums, eligibility and other restrictions, as well as charges and expenses. Certain money market funds may impose liquidity fees and redemption gates in certain circumstances.

Some mutual funds sold through you impose a charge on the purchase of shares, called a "sales load." I may be able to purchase mutual fund shares through you without paying a front-end sales load, but I may be charged a fee, called a "contingent deferred sales charge," when I sell or redeem my shares. You may receive part or the entire sales load.

As discussed in the prospectus, some mutual funds agree to waive or reduce front-end sales loads for purchases over certain amounts. I am responsible for determining and obtaining any waivers, breakpoints, or providing you with sufficient information to assist me in obtaining such.

You may receive remuneration from fund companies, including, those participating in your no-load, no-transaction-fee program, for record-keeping, shareholder services, and other administrative and distribution services. The amount of your remuneration for these services is based in part on the amount of investments in such funds by your clients. Some mutual funds impose a distribution or service fee known as a "12b-1 fee." You may receive the 12b-1 fees in connection with my investment in such fund's shares. If I invest online in no-transaction-fee mutual funds ("NTF funds") directly through you, I will not pay a transaction fee. I also may be able to purchase mutual funds directly from the fund's distributor or underwriter without incurring a transaction fee. You receive remuneration from fund companies participating in the NTF fund program. NTF funds have other fees and expenses that apply to continued investment in the fund that are described in the prospectus. TD Ameritrade receives remuneration from certain ETFs (exchange-traded funds) that participate in commission-free ETF program for shareholder, administrative, and other services.

j. Sweep Program. My available cash may be swept into a sweep vehicle pending investment of the cash. The alternatives available under the Sweep Program are referred to as "Sweep Choices," and the one I select is referred to as the "Designated Sweep Vehicle." You will notify me of the Sweep Choices and the Designated Sweep Vehicle. I agree that at account opening my Designated Sweep Vehicle will be the TD Ameritrade FDIC Insured Deposit Account (described below), unless I select a different Sweep Choice.

Cash will be automatically invested or deposited in the Designated Sweep Vehicle, according to a sweep schedule determined by you. Proceeds from the sale of securities will be swept into the Designated Sweep Vehicle following settlement if the securities sold have been received in good deliverable form by the settlement date. The proceeds of any checks that I deposit to my Account will be swept to the Designated Sweep Vehicle on the Business Day after receipt by you and will begin earning dividends or interest on that day. Access to such funds may be withheld for up to four Business Days to assure that such checks have not been returned unpaid. I may instruct you to change my Designated Sweep Vehicle at any time to another of the Sweep Choices, and acknowledge that such instruction shall constitute my authorization to liquidate balances in my Designated Sweep Vehicle and transfer such balances to the new Designated Sweep Vehicle. I authorize you to automatically withdraw cash or redeem securities maintained in a Designated Sweep Vehicle to satisfy my obligations. I authorize you to act as my agent to purchase and redeem balances in the Designated Sweep Vehicles, and authorize you to select and use agents as you deem appropriate.

The Sweep Choices may include money market funds or an FDIC-insured deposit account ("IDA") for which you or your affiliates receive, to the extent permitted by Applicable Rules, transaction, and other fees for providing services. These fees will vary depending on the money market fund (or share class) or IDA used. No portion of these fees will reduce or offset the fees otherwise due to you unless required by Applicable Rules.

There may be certain minimum requirements for initial and subsequent investments in the Designated Sweep Vehicles. You may change the eligibility criteria or replace the Sweep Choices available to me. You will give me advance notice of any such change in Sweep Choices. Unless I notify you of an objection to such change, I authorize you to withdraw cash or redeem securities held in the prior Designated Sweep Vehicle and to invest or deposit the proceeds in the replacement Designated Sweep Vehicle.

If my Designated Sweep Vehicle is a money market fund or IDA, and my Account is flagged as a "Pattern Day Trader," on the next Business Day, you may change my Designated Sweep Vehicle to TD Ameritrade Cash (described below).

- 1. TD Ameritrade FDIC Insured Deposit Account.** If the IDA is my Designated Sweep Vehicle, the available cash in my Account will be automatically deposited into an IDA at one or more banks ("Program Banks"). Two of the Program Banks are TD Bank, N.A. ("TD Bank") and TD Bank USA, N.A. ("TD Bank USA"), both affiliates of you. You will maintain a list of the current Program Banks on your website. The IDAs at the Program Banks are savings or checking accounts held in the name of Clearing as agent for its customers. You have arranged the IDAs and account records in such a way that "pass through" FDIC insurance is available to me as if I had opened the IDAs directly with a Program Bank in my own name. As a result, my funds at each Program Bank will be eligible for FDIC insurance in an amount equal to \$250,000 for principal and accrued interest per depositor in each recognized legal capacity (for example, Individual, Joint, IRA). The bank sweep program has been structured to provide me with access to at least two Program Banks resulting in up to \$500,000 in FDIC insurance per depositor in each recognized legal capacity (for example, up to \$500,000 for individual accounts and \$1,000,000 for joint accounts). Subject to deposit limits pursuant to agreements with the Program Banks, to the extent that my cash is being deposited into more than two Program Banks, it is possible for me to obtain total FDIC insurance in excess of \$500,000 per depositor in each recognized legal capacity. In addition, you will determine the order of the Program Banks in the IDA for the purposes of accepting deposits based on several factors including, but not limited to, minimum and maximum deposit balances agreed to with a particular Program Bank and the contractual arrangement between you and a particular Program Bank. Such FDIC insurance will cover my money in each IDA, together with any other deposits held at each Program Bank in the same legal capacity (for example, Individual, Joint, IRA). Questions about FDIC insurance coverage may be directed to you. Information also may be obtained by contacting the FDIC, by letter (550 17th Street NW, Washington, D.C. 20429), by phone (877-275-3342, 800-925-4618 ([TTY])), by email (dcainternet@fdic.gov), or by accessing the FDIC website at fdic.gov. Learn more about FDIC coverage by using the FDIC's Electronic Deposit Insurance Estimator at 5.fdic.gov/edie/.

My available cash will be deposited into an IDA at one or more Program Banks. You will deposit up to \$247,500 in the Program Banks, per depositor per legal capacity, except for "the Excess Bank" which will receive deposits without limit, even if the amount in the IDA exceeds the FDIC insurance available to me. The list of Program Banks including "the Excess Bank" is included on your website at tdameritrade.com/idadprogrambanks. Any deposits (including certificates of deposit) that I maintain in the same insurable capacity directly with a Program Bank, or through an intermediary (such as you or another broker), will be aggregated with deposits in my IDA at such Program Bank for purposes of determining my maximum FDIC insurance amount. I am responsible for monitoring the total amount of deposits that I maintain at the Program Banks in order to determine the extent of FDIC coverage available to me. I acknowledge that the IDAs constitute an obligation of the Program Banks and are not your obligation. I can obtain publicly available financial information concerning each Program Bank at ffiec.gov/nic or by contacting the FDIC Public Information center by mail at L. William Seidman Center, Virginia Square, 3501 North Fairfax Drive, Arlington, VA 22226 or by phone at 703-562-2200. You do not guarantee in any way the financial condition of the Program Banks or the accuracy of any publicly available financial information concerning the Program Banks. You will not be responsible for any insured or uninsured portion of the IDAs. Cash in my Account will be automatically swept on a daily basis to the IDAs at the Program Banks. As required by federal regulations, the Program Banks have the right to require seven days' prior notice before permitting a withdrawal out of a savings account. Currently, the Program Banks do not intend to exercise this right. In addition, savings accounts you hold as agent for me at a Program Bank have transfer limits that prevent using such accounts as a transaction account. The following applies to the IDAs:

- When available cash is available for deposit, you will deposit available cash from my Account into an IDA at one or more Program Banks. You will periodically rebalance my IDAs so the total amount of my funds in the IDA at Program Banks remains below applicable FDIC insurance limits (except for the Excess Bank, which has no limit).
- All withdrawals necessary to satisfy debits in my Account will be made by Clearing, as my agent. A debit will be created when I purchase securities or request a withdrawal of funds from my Account.
- My account statement will display the name of each Program Bank with which I have deposits, the balance of deposits at each Program Bank, any withdrawals made during the month, and the applicable interest rate and amount of interest earned on my deposits.
- The deposit limit at the Program Banks is set slightly below FDIC-insurance thresholds to allow for accrued interest on deposits. The deposit limit at the Program Banks is set at \$247,500 (\$495,000 for Joint Accounts), which may be reset from time to time based on FDIC-insurance limits and the interest rate environment. If interest paid on my funds in the IDA at one of the Program Banks results in my total funds in the IDA exceeding the deposit limit at another Program Bank, the IDAs will be rebalanced the next day and the amounts in excess of the deposit limit will be transferred to another Program Bank.
- I may not change the Program Banks, the order in which funds are deposited into the Program Banks, or the maximum deposit amount at any Program Bank. I may withdraw from the bank sweep program at any time and use another Sweep Choice.
- I will earn interest on my deposits in the IDAs in accordance with the rates or tiered rates available to me as determined by you. I understand that rates may vary based on the particular offering or the level of my assets held with you. Interest rates earned in the IDAs will vary over time, but will be paid consistent with the rate or tiered rate you make available to me regardless of which Program Bank holds my cash. The interest rates paid with respect to the IDAs may be higher or lower than the interest rates available to depositors making deposits directly with the Program Banks or other depository institutions in comparable accounts. The current interest rate will be available on the websites, or I may contact you to obtain the current rate. Interest will accrue on balances from the day they are deposited into the IDAs through the Business Day preceding the date of withdrawal from the IDA. Interest will be accrued daily and credited on the last Business Day of each month. You use the daily balance method to calculate interest on my Account.
- Clearing will act as my agent in depositing funds into the IDAs and withdrawing funds from the IDAs. No evidence of the IDAs, such as a passbook or certificate, will be issued to me. Ownership of the IDAs at the Program Banks will be evidenced by a book entry on the records of the Program Banks, and by records maintained by Clearing. I will contact you if I believe there has been any unauthorized activity between my Account and the IDAs, or if I have any complaints regarding the IDAs at the Program Banks.
- You may terminate my use of the IDA sweep feature. If you terminate my use of the IDA sweep feature, or do not wish to continue to act as my agent with respect to the IDA, I may deal directly with the Program Banks, subject to their rules, with respect to establishing and maintaining deposit accounts. In the event you terminate my use of the IDA sweep feature, you will inform me of the replacement Sweep Choice. Similarly, if I decide to terminate my use of the IDA sweep feature, or that I no longer wish to have Clearing act as my agent with respect to the IDAs, I may establish a direct depository relationship with the Program Banks, subject to the Program Banks' rules. Establishing a direct depository relationship with the Program Banks will result in the separation of my deposit balances at the Program Banks from my Account.
- The Program Banks use IDA balances to fund current and new investment and lending activity. The Program Banks seek to make a profit by achieving a positive spread between their cost of funds (for example, deposits) and the return on their assets, net of expenses. You receive a fee from the Program Banks that ranges from 0.85 to 1.20%. You have the right to waive all or part of this fee. The rate of the fee that you receive may exceed the interest rate or effective yield that I receive in my balances in the IDAs, and the payment of the fee reduces the yield that I receive. Other than the applicable fees charged on brokerage accounts, there will be no charges, fees, or commissions imposed on my Account for this Sweep Choice. The current IDA interest rate will be disclosed on your website and may be changed without prior notice.
- My deposit into IDAs at the Program Banks may need to be limited if one or more Program Banks stop accepting deposits. You will provide advance notification via the website, or other reasonable means, if any Program Bank is removed from the bank sweep program, and if advance notice is not practicable, you will notify me as soon as is reasonably practicable. If a Program Bank ceases to make its IDA available through the IDA sweep feature, I will be given an opportunity to establish a direct relationship with that Program Bank outside of the IDA sweep feature, or to transfer funds to another Program Bank participating in the IDA sweep feature, if available.
- In the event that FDIC insurance payments become necessary, the FDIC is required to pay principal plus unpaid and accrued interest to the date of the closing of the relevant Program Bank, as prescribed by applicable laws and regulations. Because there is no specific time period during which the FDIC must make available such insurable payments, I should be prepared for the possibility of an indeterminate delay in obtaining insurable payments. In addition, I may be required to provide certain documentation to the FDIC and you, such as affidavits and indemnities, before any insurance payouts are released to me. For example, if the IDA balances are held by me as trustee for the benefit of trust participants, I may be required to furnish an affidavit to that effect.
- You may change the bank sweep program terms and conditions by providing me 30 days' advance notice.

2. **TD Ameritrade Cash.** If I selected TD Ameritrade Cash as my Designated Sweep Vehicle, you will pay interest on available cash in my Account, the rate of which may be changed without prior notice. Interest will be accrued daily and credited on the last Business Day of each month. You may vary interest rates among clients in connection with special offers or combinations of services or in other circumstances. TD Ameritrade Cash represents balances pending investment and is not maintained solely for receiving credit interest. You segregate customer cash consistent with the Securities and Exchange Commission rules and regulations.
3. **Money Market Funds.** Investments in money market funds are subject to eligibility and other restrictions, as well as charges, and expenses, all as further described in the prospectus. Money market funds are securities that may increase or decrease in value. They are not insured or guaranteed by the FDIC, any other government agency, or you, and there can be no assurance that such funds will be able to maintain a stable net asset value of \$1 per share. I understand that I will receive period statements for sweep transactions involving money market funds in lieu of immediate confirmations.

k. Callable Securities. I consent to your lottery system for allocation of partial redemption or calls. A description of your procedures for callable securities is available on your website, or hard copies are available upon request.

9. MARGIN TRADING

a. Margin Account. When I purchase securities on margin, I am borrowing money from you and pledging all securities and other property in my Account as collateral for these loans. I agree to evaluate my own financial situation, resources, investment objectives, and other relevant circumstances to determine whether margin transactions are appropriate for me. You will not make this determination. Even if I determine that margin is appropriate for me, you determine whether to make such loans to me. I also understand that trading securities on margin involves a variety of risks, including the following:

1. **I can lose more funds than I deposit in the margin Account.** A decline in the value of securities that I purchase on margin may require me to provide additional funds to you to avoid the forced sale of those securities or other securities or assets in my Account. I could lose more than the amount I deposit in my Account.
2. **You can force the sale of securities or other assets in my Account.** If the equity in my Account falls below the maintenance margin requirement, or any higher "house" requirements, you can sell the securities or other assets in any of my Accounts to cover the margin deficiency. I also will be responsible for any shortfall in the Account after such a sale.
3. **You can sell my securities or other assets without contacting me.** Some investors mistakenly believe that a firm must contact them for a margin call to be valid, and that the firm cannot liquidate securities or other assets in their accounts to meet the call unless the firm has contacted them first. This is not the case. Although you may attempt to notify me of margin calls, you are not required to do so, and even if you have contacted me and provided a specific date by which I can meet a margin call, you can still take necessary steps to protect your financial interests, including immediately selling securities without notice to me.
4. **I am not entitled to choose which securities or other assets in my Account are liquidated or sold to meet a margin call.** Because the securities are collateral for my margin loan, you have the right to decide which securities to sell in order to protect your interests.
5. **You can increase your "house" maintenance margin requirements at any time, and you are not required to provide me advance written notice of the change.** These changes to your policy often take effect immediately and may result in the issuance of a maintenance margin call. My failure to satisfy the call may cause you to liquidate or sell securities in my Account.
6. **I am not entitled to an extension of time on a margin call.** While an extension of time to meet margin requirements may be available to clients under certain conditions, I do not have a right to any extension. You will determine whether to provide an extension.

b. Initial Margin and Margin Maintenance Requirements. There are rules and regulations covering margin loans, including the initial and margin maintenance requirements for margin Accounts. You may impose more stringent margin requirements, which may change without notice to me. To trade on margin, my Account must maintain at least \$2,000 in minimum equity. I will meet the margin requirement in my margin Account before entering any order and will satisfy any additional requirements you may require. You may apply all premiums received from options writing against my margin requirements. I have the obligation to monitor the balances in my margin Account to ensure that I maintain sufficient amounts to meet margin requirements at all times. I agree to read carefully the TD Ameritrade Margin Handbook before purchasing securities on margin. You may decline to extend credit to me for any reason, subject to Applicable Rules. There may be times when you have extended credit on certain securities, but due to market or other conditions, you may require additional cash or securities.

c. Margin Interest. I will pay interest on any credit provided to me for the purpose of purchasing, carrying, or trading in any security.

d. Margin Interest Rates. You utilize a base rate ("Base Rate") to set margin interest rates. My margin interest rate will vary based on the Base Rate and the margin balance ("Balance") in my margin Account during the interest period. The Base Rate may be changed without prior notice to me. You will post on the websites any changes to the Base Rate.

e. Interest Calculation. For each day there is a debit balance in my Account, the interest charged for that day is calculated by multiplying the applicable interest rate by my debit balance, with the result divided by 360. The sum of the daily interest charges is totaled at the end of each Account statement period and is posted to my Account on the last Business Day of the Account statement period. I will not earn interest on credit balances in my short Account.

f. Short Sales. Sales designated as "short" are done in my margin Account, and are subject to different margin maintenance requirements than securities purchased on margin. Short sales are subject to certain regulatory rules and cannot be executed under certain market conditions. You may not always have the securities available to facilitate my short sale. You may, without notice, "buy-in" securities to cover any short security position in my Account. I will reimburse you for any losses that you may incur. You may require me to deposit Collateral if the Collateral in my Account becomes insufficient. Short sale proceeds are part of the Collateral that secures your loan to me. I am also liable for all dividends paid, and all other distributions of cash or property, on securities that I have sold short.

g. Pledge of Securities and Other Property. You may pledge, repledge, hypothecate, or re-hypothecate, without notice to me, all securities and other property that you hold, carry, or maintain or for any of my margin or short Accounts. You may do so without retaining in your possession or under your control for delivery the same amount of similar securities or other property. The value of the securities and other property that you may pledge, repledge, hypothecate, or re-hypothecate may be greater than the amount I owe you, and any losses, gains, or compensation that result from these activities will not accrue to my Account.

h. Loan of Securities. You are authorized to lend to yourself or others any securities you hold in my Account and to carry all securities lent as general loans. In connection with such loans, you may receive compensation and retain certain benefits that I will not be entitled to, such as interest on Collateral posted for such loans. In certain circumstances, such loans may limit my ability to exercise voting rights with respect to the securities lent. I may request that fully paid securities not be used in connection with short sales. I understand that in certain situations in which you have borrowed my securities, I may receive a "payment in lieu" of the dividend issued (see Margin Handbook for more details).

10. OPTIONS TRADING

If I elect to engage in options transactions, I will be bound by the following additional terms:

a. Suitability. Options are not suitable for all investors. Options trading has inherent risks and I am prepared financially to undertake such risks and to withstand the losses that may be incurred. I acknowledge I have received or have been given access to the "Characteristics and Risks of Standardized Options" by the Options Clearing Corporation (OCC).

b. General Terms.

- I am responsible for knowing the rights and terms of all options in my Account. I agree to be bound by the FINRA, OCC, and exchange rules applicable to the trading of options contracts.
- If my options trading occurs in a margin Account, it is subject to the terms and conditions applicable to margin trading.
- Settlement on options cleared through the OCC is the Business Day after the trade date. I shall not exceed the position and exercise limits imposed by the rules of the OCC.
- I am responsible for instructing you as to my intention to exercise options contracts before the expiration date. Absent proper and timely exercise instructions from me, you have no obligation to exercise any right, privilege or obligation of any option for my Account. I agree that my failure to provide you with proper and timely instructions may result in the option expiring worthless, even though it may have a monetary value on the expiration date. I agree to read carefully the Margin Handbook for additional terms and important information regarding options exercise.
- You collect information only to establish option trading permission and not for the purpose of monitoring Account holdings or option positions.
- You and Clearing are authorized to take steps to protect their position and any obligation they have assumed at my request without notifying me.
- If I write (short) a call options contract that requires the delivery of securities to be sold, I may be required to keep the securities in my Account until the expiration of the options period and may not be allowed to sell or withdraw the securities.
- If I write (short) a put options contract that requires payment for securities to be purchased, I may be required to keep sufficient funds in my Account to make the payment until the expiration of the options period, and may not be allowed to withdraw the funds or use them for any other purpose. If I am assigned on the options, Clearing may use the funds for the purchase of the securities without prior notice to me.
- All short equity and some index options positions are available for assignment. Exercise assignment notices for equity or index options are randomly allocated among all clients' short positions.

11. INITIAL PUBLIC AND FOLLOW-UP OFFERINGS

You may participate as underwriter or a member of the selling group of, and provide access to, Initial Public Offerings (IPOs) and follow-up offerings. If I participate in such, I will be bound by additional terms.

12. ARBITRATION

This Agreement contains a predispute arbitration clause. By signing an arbitration clause, the parties agree as follows:

- All parties to this Agreement are giving up their right to sue each other in court, including the right to jury trial, except as provided by the rules of the arbitration forum in which a claim is filed.
- Arbitration awards are generally final and binding; a party's ability to have a court reverse or modify an arbitration award is very limited.
- The ability of the parties to obtain documents, witness statements, and other discovery is generally more limited in arbitration than in court proceedings.
- The arbitrators do not have to explain the reason(s) for their award unless, in an eligible case, a joint request for an explained decision has been submitted by all parties to the panel at least 20 days prior to the first scheduled hearing date.
- The panel of arbitrators may include a minority of arbitrators who were or are affiliated with the securities industry.
- The rules of some arbitration forums may impose time limits for bringing a claim in arbitration. In some cases, a claim that is ineligible for arbitration may be brought in court.
- The rules of the arbitration forum in which the claim is filed, and any amendments thereto, shall be incorporated into this Agreement.
- No person will bring a putative or certified class action to arbitration, nor seek to enforce any predispute arbitration agreement against any person who has initiated in court a putative class action; or who is a member of a putative class who has not opted out of the class with respect to any claims encompassed by the putative class action until: (1) the class certification is denied; (2) the class is decertified; or (3) the client is excluded from the class by the court. Such forbearance to enforce an agreement to arbitrate will not constitute a waiver of any rights under this Agreement except to the extent stated herein.

I agree that any controversy between you and your affiliates, any of their respective officers, directors, employees, or agents and me (including any of my officers, directors, employees, or agents) arising out of or relating to this Agreement, our relationship, any Services provided by you, or the use of the Services, and whether arising before or after the date of this Agreement, shall be arbitrated and conducted under the provisions of the Code of Arbitration of the FINRA. If any party unsuccessfully resists confirmation or enforcement of an arbitration award rendered under this Agreement, then that party shall pay all costs, attorneys' fees, and expenses incurred by the other party or parties in confirming or enforcing the award.

Arbitration must be initiated by service upon the other party of a written demand for arbitration or notice of intention to arbitrate. Judgment, upon any award rendered by the arbitrator, may be entered in any court having jurisdiction.

13. ADVICE

- a. Unless otherwise noted by you in writing, you will act only as broker-dealer and not as an investment advisor governed by the Investment Advisers Act of 1940.
- b. When I act as a self-directed investor, I am responsible for determining the suitability of any particular investment strategy, transaction, or security. You have no responsibility for any such determination unless you otherwise agree in writing, or you or your representative gives advice directly to me that is identified clearly as a recommendation by you to enter into a particular transaction or to buy, sell, or hold a particular security or securities.
- c. From time to time, in connection with my Account, you may provide investment-related guidance or recommendations to me. In the event that a recommendation is made, you and/or your representative shall have my informed consent to deliver the Form CRS Customer Relationship Summary for TD Ameritrade or its affiliates, as required ("Form CRS") - as well as any other notices, disclosures, or communications - to any mailing address, email address or facsimile number that I provide in connection with either the Account, or any other accounts that I open or otherwise maintain with you. I understand that I can also access the Form CRS by visiting tdameritrade.com/regbi. I understand and acknowledge that it is incumbent on me to provide you with current and accurate contact information for the delivery of these documents. I acknowledge that I shall read and understand the Form CRS - as well as any other notices, disclosures, or communications - prior to acting upon any such recommendation. I agree that when you make a recommendation to me, you determine whether it is suitable and in my best interest at the time of the recommendation. If the recommended transaction is not effected contemporaneously with your recommendation, I agree you will have no liability if I choose to effect such transaction in the future. Furthermore, when you are acting as broker-dealer for my Account, I agree that you have no ongoing duty to ensure a recommendation continues to be suitable for me. Rather, I have an affirmative duty to monitor profits and losses in my Account, along with my investment goals and risk tolerance and to modify my trading decisions accordingly.
- d. Unless otherwise agreed to in writing, you do not have discretionary authority over my Account or an obligation to monitor, review or make recommendations for the investment of securities or cash in my Account.
- e. Any research, analysis, news, or other information made available by you does not constitute an individualized recommendation by you to buy, sell, or hold a particular security.
- f. You do not provide legal, tax, or estate planning advice.

14. MISCELLANEOUS

- a. Severability.** If any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws, such provisions shall be fully severable. In such event: (1) this Agreement shall be construed and enforced as if such illegal, invalid, or unenforceable provision has never comprised a part of this Agreement or was modified to be legal, valid, and enforceable; and (2) the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provisions or by its severance from this Agreement, to the extent permitted by Applicable Rules.
- b. Account Handbook.** The Account Handbook provided to me upon account opening, and available on your websites, contains important information about my Account. I will refer to the Account Handbook to learn additional information about the handling of trade orders, the receipt and delivery of funds, account policies, and other general account information.
- c. Entirety of Agreement.** This Agreement, any attachments hereto, the addenda and other agreements referred to in this Agreement and the terms and conditions contained in the Account statements and confirmations contain the entire agreement between you and me; and it supersedes all prior or contemporaneous communications and proposals, whether electronic, oral, or written, between me and you, provided, however, any and all other agreements if any, between me and you and your affiliates, not inconsistent with this Agreement will remain in full force and effect, and if there are any conflicts between this Agreement and any attachments or other agreements, this Agreement shall prevail.
- d. Assignment and Escheatment.** I may not assign this Agreement or any rights or obligations under this Agreement without first obtaining your prior written consent. You may assign, sell, or transfer my Account and this Agreement, or any portion thereof, at any time, without my prior consent. The assets in my Account may be transferred to the appropriate state if no activity occurs in my Account within the time period specified by state law.
- e. Amendment.** You reserve the right to amend this Agreement without prior notice to me or as required by Applicable Rules. The current version of the Agreement will be posted on the websites and my continued Account activity after such amendment constitutes my agreement to be bound by all amendments to the Agreement, regardless of whether I have actually reviewed them. You are not bound by any verbal statements that seek to amend the Agreement.
- f. Termination.** You may terminate this Agreement, or close, deactivate, or block access to my Account. If you decide to close my Account and I fail to transfer it to another broker, you may liquidate my Account and send me the proceeds. I will remain responsible for the payment of all obligations incurred in my Account or otherwise. I may terminate this Agreement after paying any obligations owed upon written notice. The Agreement survives termination of the Account.
- g. Force Majeure.** You will not be liable for loss caused directly or indirectly by conditions beyond your reasonable control, including but not limited to Force Majeure events. "Force Majeure" means events that are beyond the reasonable control of a party, including but not limited to the following: disasters, extraordinary weather conditions, earthquakes or other acts of God, war, insurrection, riot, labor strikes, terrorist acts, government restrictions, exchange or market rulings, suspension of trading, computer or communication line failure, or failure of market centers or transmission facilities.
- h. Indemnification.** I agree to indemnify and hold harmless you, your affiliates, and Third-Party Providers and your and their respective officers, directors, employees, agents, and representatives from any and all liabilities, losses, costs, judgments, penalties, claims, actions, damages, expenses, or attorney's fees (collectively "Losses") resulting or arising directly or indirectly from use of the Services or transactions in my Account, except to the extent that such Losses are the direct result of your gross negligence or willful misconduct.
- i. Waiver.** Your failure to insist on compliance with this Agreement will not constitute a waiver of any of its rights.
- j. Admissibility of Documents in Proceedings.** All documents in any format are considered to be true, complete, valid, authentic, and enforceable records of the applicable document, admissible in judicial or administrative proceedings to the same extent as if the documents and records were originally generated and maintained in printed form. I will not contest the admissibility or enforceability of your copy of the documents in any proceeding arising out of this Agreement.
- k. Governing Law, Jurisdiction, and Venue.** This Agreement will be governed by the laws of the State of Nebraska, but not its conflicts of law provisions. I hereby consent to the jurisdiction of and venue within the State of Nebraska for all disputes arising out of or relating to this Agreement.

I. NJ State Law. New Jersey law prohibits contractual provisions that violate the legal rights of a NJ consumer or responsibility of a seller. No provision in this Agreement shall apply to any NJ consumer if it violates any such right or responsibility, including grounds for redress based on: (i) your tortious actions; (ii) the NJ Punitive Damages Act; (iii) the NJ Uniform Commercial Code; or (iv) your failure to protect reasonably against criminal acts of third parties.

m. Worthless Securities. You may remove a worthless security from my account including, and without limitation to, the following circumstance: your primary custodian, the Depository Trust Company, has deemed the security eligible for removal and you have reviewed and determined, to the best of your ability, that the security has no market value. I agree to waive any claim to any future distribution from the security and agree to indemnify and hold you harmless from any claims, liability, or damages resulting from the removal of such security. If I provide you with evidence of the value of the security from an independent third party within 60 days of receiving your account statement noting the removal, you will review and, if able to, reinstate my position.

Investment Products: Not FDIC Insured * No Bank Guarantee * May Lose Value

TD Ameritrade, Inc. and TD Ameritrade Clearing, Inc., members FINRA/SIPC. TD Ameritrade, Inc., TD Bank, N.A., and TD Bank, USA are affiliated through their parent companies. TD Ameritrade is a trademark jointly owned by TD Ameritrade IP Company, Inc. and The Toronto-Dominion Bank. © 2020 TD Ameritrade.

EXHIBIT

1-C



Archive Record

Account type Individual
Account number [REDACTED] 3401
Date 11/05/2020
Do you already have an account with us? Yes

Contact information

Full name Subhashchandra Babu Mannava
Email you use regularly MANNAVASCB@GMAIL.COM

Personal information

Home address 3424 EMPRESS DR
NAPERVILLE IL 60564-1166
UNITED STATES
Daytime phone number [REDACTED]
Date of birth [REDACTED]
Are you a U.S. citizen? Yes
Are you also a citizen of another country? No
Social Security Number or ITIN [REDACTED] 0866
How do you plan to use this account? Common investment transactions, including stocks, bonds, options, ETFs, and mutual funds

I have read the TD Ameritrade Privacy Statement.

Financial information

Employment status UNEMPLOYED
Annual income \$ [REDACTED]
Net worth \$ [REDACTED]
Liquid net worth \$ [REDACTED]
Sweep of uninvested cash FDIC-insured deposit account(s)
Source of funds for initial deposit Savings
Source of funds for ongoing deposits Employment wages
Are you, or is your spouse, or is any member of your immediate family living in the same household licensed by, employed by, or associated with a broker-dealer firm, a financial services regulator, a securities exchange, or a No

member of a securities

exchange?

Are you, or is your spouse, or No
is any member of your
immediate family a member of
the board of directors, a 10%
shareholder, or a policy-
making officer of a publicly
traded company?

Electronic delivery of documents

- Client Relationship Summary (TDA101313)
- Client Agreement (AMTD182)
- Account Handbook (TDA066)
- Business Continuity Plan Statement (AMTD5491)
- TD Ameritrade Privacy Statement (AMTD800)

You'll receive these documents in an email after your account is opened. They're also available after you log in to your account at Client Services > Forms & Agreements.

I, Subhashchandra Babu Mannava, accept electronic delivery of these documents and do not need them mailed to me.

IRS Form W-9 Certifications

Under penalty of perjury, I, Subhashchandra Babu Mannava, certify that:

- 352060866 is my correct taxpayer identification number
- I am not subject to backup withholding (I agree)
- I am a U.S. citizen or other U.S. person
- The FATCA code(s) entered on this form (if any) indicating that I am exempt from FATCA reporting is correct

You must select "I disagree" above if you have been notified by the IRS that you are subject to backup withholding because you have failed to report all interest and dividends on your tax return.

The IRS does not require your consent to any provision of this document other than the certifications required to avoid backup withholding.

I, Subhashchandra Babu Mannava, certify the accuracy of the IRS Form W-9 statements above.

Client Agreement

Before we can open your account, you must read and electronically sign the TD Ameritrade Client Agreement. If you do not agree with the Client Agreement or find any part of it unacceptable, you shouldn't open your account at this time.

By checking the box below, I represent that:

- I am the person identified in this account
- I am accepting and agreeing to abide by all of the Client Agreement
- I am electronically signing these documents which will have the same effect as the execution of these documents by a written signature
- I am consenting to the electronic delivery of all information relating to my account,

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including statements, confirmations, and other regulatory documents. I will receive
shareholder information electronically when available

The Client Agreement applicable to this account contains a predispute arbitration clause. By signing this agreement, the parties agree to be bound by the terms of the Client Agreement, including the arbitration agreement located in Section 12 of the Client Agreement on page 8.

[X] I, Subhashchandra Babu Mannava, agree to the terms of the Client Agreement.

Electronically signed by: Subhashchandra Babu Mannava

Date submitted: 2020-11-05 08:51:34 AM CST

Principal name: Valiere Simpson

EXHIBIT

1-D



Client Agreement

PO Box 2760 ■ Omaha, NE 68103-2760
 Fax: 866-468-6268

1. INTRODUCTION

This Agreement governs all brokerage accounts that I open with you, all transactions in my Account, the use of your websites, the Brokerage Services, the TD Ameritrade Content, and the Third-Party Content; is binding on my heirs, executors, administrators, successors, and assigns; and will inure to the benefit of your successors. By opening an Account with you, I acknowledge that I have received, read, and understand this Agreement and agree to be bound by its terms. Accounts opened with the TD Ameritrade Institutional Division are governed by a separate agreement.

"I," "me," "my," or "account owner" means each account owner who signs the Account Application. **"You," "Your," or "TD Ameritrade"** means TD Ameritrade, Inc., and, when applicable, TD Ameritrade Clearing, Inc. ("Clearing"), TD Ameritrade's clearing broker-dealer.

2. DEFINITIONS

"Account" means each brokerage account I open with you or have an interest in.

"Agreement" means these terms and conditions as well as any supplemental agreements and disclosures that apply to my Account, as amended from time to time.

"Applicable Rules" means all applicable federal and state laws, rules and regulations, rules of any self-regulatory organization, and the constitution and applicable rules, regulations, customs, and usages of the exchange or market and its clearinghouse.

"Brokerage Services" means your website and related services that you provide other than TD Ameritrade Content, which I need to place trades in my Account.

"Business Day" means Monday through Friday, excluding market holidays.

"Services" means, collectively, the websites, the Brokerage Services, the TD Ameritrade Content, and the Third-Party Content. This Agreement applies to the Services provided by you regardless of how I access them (for example, in person, phone, Internet, or by mobile device).

"TD Ameritrade Content" means all information, tools, and services available on your website, other than Brokerage Services provided by you, and not by a third party.

"Third-Party Content" means all information, tools, and services available on your website that are provided by a third party ("Third-Party Provider"), including financial and investment tools, market data, reports, alerts, calculators, access to online conferences, telecasts, bulletin boards, tax preparation, or account management tools.

"websites" means the Internet sites of TD Ameritrade, whose domain name is registered as <http://www.tdameritrade.com>, and others, and through which you offer Services.

3. MY ACCOUNT AND RELATIONSHIP WITH YOU

a. Self-Directed Account. I understand that Accounts opened with you are self-directed. I am responsible for all purchase and sell orders, decisions to continue with an investment strategy or to hold an investment, and instructions placed in my Account. Unless you provide advice to me that is clearly identified by you as an individualized recommendation for me, any investment decision that I make or investment strategy that I utilize, including the decision to hold any and all of the securities or derivatives in the Account, is based on my own investment decisions or those of my agent and is at my own risk. All investments involve risk, and unless you provide individualized recommendations to me, I or my agent are responsible for determining the suitability of any trade, investment, investment strategy, and risk associated with my investments. TD Ameritrade Content or Third-Party Content I access through you does not constitute a recommendation to invest in any security or derivative, or to utilize any investment strategy.

b. Fees and Commissions. I will pay commissions, charges, taxes, and other fees applicable to my Account. Current commission pricing and other fees are on the websites. You may change your fees and commissions at any time by posting changes on the websites or by other means.

You reserve the right to vary commissions among clients in connection with special offers or combinations of services or in other circumstances. You or Clearing may pay a portion of the revenues or fees derived from servicing my Account to third parties that provide services to you or Clearing. If my Account is an IRA or other retirement plan account, my Account may be charged fees that the particular plan has authorized to be paid to service providers other than you or Clearing.

c. Statements and Confirmations. It is my obligation to review trade confirmations and Account statements promptly upon receipt. These documents will be considered binding on me unless I notify you of any objections within five days from the date confirmations are sent and within 10 days after Account statements are sent.

d. Instructions.

1. General. You may accept and act on instructions from me, my agent, or any person authorized on my Account. You may refuse any order, or delay placing any order, if you determine that an order requires clarification from me. I will not hold you responsible for any losses caused by the rejection or delay. You will not receive any order or instruction transmitted by my agent or me until you have actual knowledge of the order or instruction. You do not determine the validity of my agent's status or capacity, the appropriateness of, or the authority or actions by such person.

2. Wire Transfers. By initiating a wire transfer from my Account with or without a letter of instruction, I agree that you may use security procedures for accepting and acting upon wire transfer instructions. I agree that such security procedures may include one, some, or all of the following, depending on the type, amount, and frequency of the wire transfer request: requestor and/or account owner identification and verification; requestor and/or account owner signature comparison or verification; confirmation of receiving bank and/or account designation; notice provided via email, message center, or phone to account owner and/or authorized agent; account surveillance and/or trending analysis. In some circumstances, you may place limits on the portability of funds and additional documentation may be required.

I agree that the above security procedures are commercially reasonable under the circumstances. I agree to be bound by instructions to initiate a wire transfer, with or without a letter of instruction, whether in fact authorized or unauthorized, which you implement in compliance with these procedures, unless I have given you prior notice of possible unauthorized activity in my Account and you have a reasonable opportunity to act on such notice.

3. ACH Transactions. From time to time, originators that I authorize may send ACH credits or debits to my account. For each ACH transaction, I agree it is subject to the NACHA Operating Rules and Guidelines or other funds transfer system rules as applicable, and that the following additional terms shall apply: (1) TD Ameritrade's payment of a funds transfer to my account will be provisional until TD Ameritrade receives final settlement or payment, and I agree that TD Ameritrade may reverse the provisional credit and/or obtain reimbursement from me if you do not receive final settlement or payment; (2) A payment by the beneficiary's bank of a funds transfer from my account to the beneficiary will be provisional until final settlement has been made or until payment is considered received under applicable law, and I agree that the beneficiary's bank may reverse its provisional credit and obtain a refund from the beneficiary and I, as the originator of the payment, will not be considered to have paid the beneficiary; (3) I hereby authorize any Originating Depository Financial Institution (ODFI) to initiate, pursuant to ACH operating rules, ACH debit entries to my account for electronic presentation or re-presentation of items written or authorized by me; and (4) If I receive an unauthorized debit, I will need to file a written unauthorized debit statement with TD Ameritrade by contacting TD Ameritrade at 1-800-669-3900

e. No Endorsement of Day Trading Strategy. You do not recommend, endorse, or promote a "day trading" strategy, which may involve significant financial risk to me.

f. Clearing Agreement. You and Clearing have entered into a clearing agreement in which Clearing is the clearing agent for securities transactions for your clients. You transmit client instructions to Clearing which causes such instructions to be executed. Clearing carries my Account on a fully disclosed basis. All securities, dividends, and proceeds will be held at Clearing unless otherwise instructed.

g. Trading in Affiliate Securities. If I transact in securities that are issued by TD Ameritrade Holding Corporation, or The Charles Schwab Corporation ("CSC") or an entity controlled by CSC, I acknowledge and understand that You are controlled by CSC, and/or You and the issuer are under the common control of CSC.

h. Account Protection. You are a member of the Securities Investor Protection Corporation ("SIPC"), which protects securities customers of its members up to \$500,000 (including \$250,000 for claims for cash). An explanatory brochure is available on request at sipc.org. Additionally, you provide each client \$149.5 million worth of protection for securities and \$2 million of protection for cash through supplemental coverage provided by London insurers. In the event of a brokerage insolvency, a client may receive amounts due from the trustee in bankruptcy and then SIPC. Supplemental coverage is paid out after the trustee and SIPC payouts and under such coverage each client is limited to a combined return of \$152 million from a trustee, SIPC, and London insurers. The TD Ameritrade supplemental coverage has an aggregate limit of \$500 million over all customers. This policy provides coverage following brokerage insolvency and does not protect against loss in market value of the securities.

To obtain information about the SIPC, including the SIPC brochure, I can contact the SIPC at:

Securities Investor Protection Corporation
805 15th St, N.W., Suite 800
Washington, D.C. 20005-2215

Tel: 202-371-8300
Fax: 202-371-6728
Email: ask@sipc.org
Website: sipc.org

i. Beneficiary Designation. Changes in the relationship between the account owner and designated beneficiary (such as, marriage, divorce, or adoption) will not automatically add or revoke beneficiary designations. For example, if an account owner designated a spouse as beneficiary and they subsequently divorced, the former spouse will remain beneficiary on the Account unless the account owner submits a new beneficiary designation to you.

j. Compliance with Laws. I agree to comply with all laws, rules, and regulations applicable to my Account.

4. ABOUT ME

a. Legal Capacity. I am of legal age in the jurisdiction in which I reside and have the capacity and authority to enter into this Agreement.

b. Accuracy of Information. All the information I provide you is true and correct. I will promptly notify you in writing within 10 Business Days after any change in such information. You may rely upon all information I provide you.

c. Interest in Account. I represent that no one except me (us) has an interest in any of my (our) Account(s) (unless I am opening the Account as a fiduciary).

d. Multiple Owners. If there is more than one Account owner, then the provisions of the Agreement apply to each owner. Accounts of husbands and wives in community property states will be held in the name of husband and wife as community property unless we instruct you otherwise; any other Joint Account will be held jointly with rights of survivorship unless I notify you of a different form of ownership and provide such documentation as you require. You will have no liability for any loss that may arise due to taking instructions from one owner or requiring instructions from all owners. If I am married, I may establish an account with my spouse as tenants by entirety. I will notify you if I become legally divorced.

e. Rights, Terms, and Obligations of Securities in Account. Except as required by Applicable Rules, you are not obligated to notify me of any events involving my securities positions, nor do you have the responsibility to take any actions on my behalf with respect to such events without specific instructions from me. I am responsible for knowing the rights, terms, and obligations of securities in my Account and for monitoring the occurrence of any events involving my securities positions or securities for which I intend to place an order.

5. PRIVACY AND CONFIDENTIALITY

a. Privacy. You will take reasonable measures to protect the privacy and confidentiality of information in your possession about my Account and me. Your Privacy Statement explains how you collect and protect my information. The Privacy Statement is incorporated into this Agreement by reference.

b. Account Number, PIN, or Password. I will receive a password and/or access number (collectively "PINs") that provides electronic access to my Account. Account numbers, User IDs, and PINs are confidential, and I am responsible for the confidentiality, protection, and use of them. Subject to the TD Ameritrade Asset Protection Guarantee, I agree to be responsible for all activities in my Account. You may be assured that I have authorized any orders or instructions that are received under my Account number and PIN or by initiating an electronic transfer of funds, with or without a letter of instruction.

c. TD Ameritrade Asset Protection Guarantee. If I lose cash or securities from my Account due to unauthorized activity, you will reimburse me for the cash or securities I lose. You promise me this protection if unauthorized activity causes losses and you determine it was through no fault of my own. You promise this protection if I do four things: (1) keep my personal identifying information and Account information secure and confidential—because sharing my User ID, password, PIN, Account number, or other standard means of authentication with other people means I authorize them to take action in my Account; (2) keep my contact information up-to-date with you, so that you can contact me in case of suspected fraud; (3) review my Account frequently and my statements promptly and report any suspicious or unauthorized activity to you immediately in accordance with this Agreement; and (4) take the actions you request and cooperate with any investigation. I agree that unauthorized activity does not include any actions or transactions undertaken by or at the request of me, my investment advisors or family members, or anyone else whom I have allowed access to my Account or to my Account information for any purpose, such as trading securities, writing checks, or making withdrawals or transfers.

d. Phone Conversations and Electronic Communications. You may record and monitor any telephone, video, or electronic communications with me.

e. Credit Reports. I authorize you to request my credit reports to verify my creditworthiness and to provide information to credit agencies. Upon request, you will inform me whether a report was requested and provide me with the name and address of the credit-reporting agency that furnished the report. Negative credit information may be submitted to a credit-reporting agency if I fail to fulfill the terms of my credit obligations.

f. Disclosure of Account Information to Third Parties. Consistent with your Privacy Statement, you and your agents are specifically authorized to disclose information about my Accounts and me to third parties.

g. Trusted Contact Authorization. If I elect to provide Trusted Contact information to you, you are authorized to communicate, verbally and in writing, with the Trusted Contact Person(s) named on the applicable Trusted Contact Authorization Form, or by other such means as I may provide Trusted Contact information to you. I understand that any communication with the Trusted Contact Person(s) may include information about any of the Account Owners, the account for which the Trusted Contact information was provided, any other accounts at TD Ameritrade in which any of the Account Owners has an interest, or any other information the Account Owners may have provided to TD Ameritrade.

I understand that you may contact the Trusted Contact Person(s) for the following reasons: (1) if there are questions or concerns about my whereabouts or health status; (2) if you suspect that I may be a victim of fraud or financial exploitation; (3) if you suspect that I might no longer be able to handle my financial affairs; (4) to confirm the identity of any legal guardian, executor, trustee, authorized trader, or holder of a power of attorney; or (5) if you have any other concerns or are unable to contact me about my Account(s) held with you. If my Account is an Entity or other Non-natural person Account, you may also contact any Authorized Agent named on the Account for the foregoing reasons.

I further agree that: (1) the Trusted Contact Authorization does not impose any obligation that you communicate with my Trusted Contact Person(s); (2) the Trusted Contact Authorization does not authorize the Trusted Contact Person(s) to make any investment decisions or transact any business with you on my behalf; (3) the Trusted Contact Authorization is optional and I may change or withdraw it at any time by notifying you in writing; (4) all named Trusted Contact Person(s) are 18 years of age or older; (5) if there are multiple Account Owners, you are authorized to follow the instructions of any one or more Account Owners in adding a Trusted Contact, and you will not be held liable for information shared with a Trusted Contact, without regard to which Account Owner(s) authorized the addition of the Trusted Contact; and (6) you are released and discharged from all claims, causes of action, damages, losses, expenses, costs, and liabilities of any kind that may arise out of, relate to, or are in connection with the release of, or failure to release, personal and/or account information to the Trusted Contact Person(s).

6. CLIENT COMMUNICATIONS

a. Addresses. You may send communications to the mailing address, email, telephone number, or facsimile number that I provide. You also may deliver information verbally or via the Secure Message Center on your website. Communications shall be deemed delivered to me whether or not I actually receive them.

b. Electronic Signatures. My use of electronic signatures to sign your documents legally binds me in the same manner as if I had manually signed. The use of an electronic version of these documents fully satisfies any requirement that they be provided to me in writing. If I sign electronically, I represent that I have the ability to access and retain a record of the documents. I am responsible for understanding these documents and agree to conduct business with you by electronic means. I am obliged to review periodically the websites for changes or modifications.

c. Consent. By consenting to the electronic delivery of all information relating to my Account, I authorize you to deliver all communications to me by the following means: (1) by email at the email address specified by me; (2) by posting the communication on the websites or other sites on the Internet where the communication can be read and printed; (3) by sending me an email that includes a hyperlink to the websites or an address on the Internet where the information is posted, and can be read and printed; and (4) by sending me a notice that directs me to an address on the Internet or a place within the websites where the communication is posted and from which it can be read and printed. Such delivery will be an effective delivery to me for the purpose of any Applicable Rules whether or not I access or review the communication. Although I consent to electronic delivery, you may elect to deliver communications by other means which shall not affect my consent. I will notify you of any change in my address. I may revoke my consent to electronic delivery of communications and receive documents on paper. You have a reasonable period to effect such a change and may charge a reasonable fee for sending paper copies.

d. Equipment. If I agree to electronic delivery, I must have a computer with Internet access, an email address, and the ability to download and save or print communications to retain for my records. I am responsible for obtaining and maintaining all equipment and services required for online access of my Account.

7. ELECTRONIC SERVICES

a. Availability. You do not guarantee that any media will be available to me at a particular time. Access to the websites may be limited or unavailable during periods of peak demand, market volatility, system upgrades, or other reasons.

You reserve the right to suspend and deny access to the Services, without prior notice or for any reason. I recognize that Account activity may be conducted through several different media (for example, Interactive Voice Response phone system [IVR] and phone); and if a certain medium is not available, I will use another medium to conduct Account activity. You will not be liable for the unavailability, delay, or failure of any of the media at any particular time or for the accessibility of, transmission quality, outages to, or malfunction of any telephone circuits, computer system, or software.

b. Use of Services. I will use the Services for lawful purposes, for my personal and noncommercial use, and as permitted by this Agreement. I will not transmit through the websites any material that violates or infringes in any way upon the rights of others or would encourage conduct that may give rise to civil or criminal liability. I will not modify, copy, publish, transmit, license, participate in the transfer or sale of, reproduce, create derivative works from, distribute, redistribute, display, or in any way exploit the Services. I will not upload, post, decompile, reverse engineer, disassemble, modify, copy, distribute, transmit, reproduce, republish, license, display, sell or transfer, or create derivative products from the Services. Software accessed on the websites is subject to U.S. export controls and may not be downloaded by any person prohibited from doing so by Applicable Rules.

I may download software on a single computer for personal, noncommercial use, provided I keep intact all copyright and other proprietary notices. You and Third-Party Providers reserve the right to revise, modify, change, upgrade, suspend, impose limitations or restrictions on, deny access to, remove, or discontinue the Services at any time without prior notice. Third-Party Providers may enforce this Agreement against me and take action against me for my breach of this Agreement. I further acknowledge that I am subject to any agreements for the receipt and use of real time market data as distributed by the Securities Information Processors, such as those agreements governing subscriber use published at CTAPlan.com.

c. Limitation of Liability. The Services are provided "as is" and "as available." You, your affiliates, the Third-Party Providers and their respective licensors, employees, distributors, or agents make no representations with respect to the system and expressly disclaim all warranties. Subject to Applicable Rules, in no event will you, your affiliates, the Third-Party Providers or their respective licensors, employees, distributors, or agents be liable to me or any third party for any direct, indirect, incidental, special, punitive, or consequential losses or damages of any kind with respect to the Services.

I am solely responsible for my investment research, and neither you nor any Third-Party Provider make any representations, warranties, or other guarantees as to the accuracy or timeliness of any market data; nor do you or any Third-Party Provider make any representations, warranties, or other guarantees as to the present or future value or suitability of any sale, trade, or other transaction involving any particular security or any other investment.

d. Intellectual Property. My use of the Services will not confer any title, ownership interest, or intellectual property rights to me. The Services are protected under U.S. patent, copyright laws, international treaties or conventions and other laws, and will remain the exclusive property of you or Third-Party Providers. Company names, logos, and all related product and service names, design marks, and slogans of you or your affiliates or any Third-Party Provider are the property of the respective company. I am not authorized to use any such name or mark in any advertising, for publicity, or in any other commercial manner.

e. Cookies. You use cookies on websites and my browser will need to accept all cookies for it to perform fully. Certain features of the websites may also require the acceptance of cookies.

f. Hyperlinks. The websites may include hyperlinks to websites, owned or operated by affiliated or unaffiliated third parties. Neither you nor Third-Party Providers are responsible for the content or availability of such other websites, and shall not be responsible or liable for any loss in connection with reliance on such sites.

8. BROKERAGE SERVICES

a. Order Routing and Executions. Unless I specify the market for execution, you decide where to route my orders for execution. You consider a wide variety of factors in determining where to direct my orders, such as execution price, opportunities for price improvement (which is when an order is executed at a price that is more favorable than the displayed national best bid or offer), market depth, order size and trading characteristics of the security, efficient and reliable order handling systems and market center service levels, speed, efficiency, accuracy of executions, and the cost of executing orders at a market. If I instruct you to route my order to a particular market for execution ("Direct Routing"), and you accept my order and instruction, you are not required to make a best execution determination beyond executing the order promptly and in accordance with the terms of my order. Instructions to direct my order to certain market centers could incur additional fees.

b. Deposit and Order Refusal; Account Restrictions. You reserve the right not to accept the deposit of funds or particular securities into my Account and may refuse any of my orders. You also reserve the right to place trading, disbursement, and other restrictions on my Account. You may restrict my Account from withdrawals or trading if there is a reasonable suspicion of fraud, diminished capacity, inappropriate activity, or if you receive reasonable notice that the ownership of some or all of the assets in my Account is in dispute. I will not hold you liable for any loss I may incur due to your refusal to permit any deposit, withdrawal, or transaction.

c. Trade Execution and Price. You route orders to markets for prompt execution in view of prevailing market conditions, but there can be delays in the processing of orders. I understand and agree with the following:

- The quoted price may not reflect the trading activity from all markets.
- High volumes of trading at the market open or intraday may cause delays in executions and result in prices significantly different from the price quoted at the time the order was entered.
- Markets may handle orders manually and may reduce size guarantees during periods of volatility, resulting in possible delays in order execution, and losses.
- The execution price I receive may be impacted by numerous factors beyond your control and responsibility, including the type of security, liquidity, and the size of my order. For example, large or "block" orders or orders involving illiquid securities may take additional time to execute and may execute at prices significantly different from the quoted price.
- The execution of market and stop-market orders may be at a price significantly different from the quoted price of that security. Limit orders will be executed only at a specified price or better, but there is the possibility that the order will not be executed.
- Securities traded in over-the-counter bulletin board and pink sheet securities and other thinly traded securities present particular trading risks in that they are often more volatile and generally less liquid than securities traded on exchanges. You reserve the right to place restrictions on the trading of such securities without prior notice.
- I may suffer market losses during periods of volatility in the price and volume of a particular stock when systems issues result in an inability to place buy or sell orders.

d. Payment for Order Flow. You may receive remuneration from markets for directing orders to them. The source and amount of these payments are available upon written request. Markets may act as principals to buy, sell or hold securities for their own accounts, and they may make money when executing your trade.

e. Payment for Transactions. All orders that I authorize will be processed with the understanding that I will pay for any purchase and deliver certificates to cover all sales on or before the settlement date. All sell orders that I place will be for securities that I own ("long") and in deliverable form at the time I place the order, unless I inform you otherwise.

You reserve the right to require full payment, or an acceptable equity deposit, prior to the acceptance of any order. I will have the required cash, available funds, or equity in my Account prior to the execution and/or settlement of a purchase or short sale transaction, and the required securities in my Account prior to the execution and/or settlement of a long sale. If I do not have sufficient funds or securities in my Account, you have the right to liquidate or buy in securities at my expense, and I will be responsible for any cost or loss.

f. Payment of Indebtedness Upon Demand. If I incur and indebtedness in an account held with one of your affiliates, such as TD Ameritrade Futures & Forex LLC, I understand and acknowledge that you and your affiliates may decide to transfer my indebtedness to my Account. Subject to Applicable Law, I will be liable for the payment upon your demand of any obligations owing in my Account, including the reasonable costs incurred in collecting such amounts.

g. Security for Indebtedness. I consent to you having a continuing security interest in, right of set-off to and lien on all securities, cash, investment property, and other property in my Account ("Collateral"). Subject to Applicable Rules, and without prior notice to me, you may sell or transfer the Collateral to satisfy my obligations. You also have the discretion to determine which securities and other properties are to be sold and which contracts are to be closed. You have all the rights of a secured party under the Uniform Commercial Code.

h. Short Sales. I will designate any sell order as a "short" sale if at the time I place the order I do not own the security I intend to sell or am unable to deliver the security before settlement. All short sales will be executed in a Margin Account.

i. Mutual Funds and ETFs. I authorize you to custody mutual fund holdings that I purchase directly through you. When purchasing a mutual fund, I acknowledge that I have received and read the fund prospectus. Mutual fund purchases may be subject to investment minimums, eligibility and other restrictions, as well as charges and expenses. Certain money market funds may impose liquidity fees and redemption gates in certain circumstances.

Some mutual funds sold through you impose a charge on the purchase of shares, called a "sales load." I may be able to purchase mutual fund shares through you without paying a front-end sales load, but I may be charged a fee, called a "contingent deferred sales charge," when I sell or redeem my shares. You may receive part or the entire sales load.

As discussed in the prospectus, some mutual funds agree to waive or reduce front-end sales loads for purchases over certain amounts. I am responsible for determining and obtaining any waivers, breakpoints, or providing you with sufficient information to assist me in obtaining such.

You may receive remuneration from fund companies, including, those participating in your no-load, no-transaction-fee program, for record-keeping, shareholder services, and other administrative and distribution services. The amount of your remuneration for these services is based in part on the amount of investments in such funds by your clients. Some mutual funds impose a distribution or service fee known as a "12b-1 fee." You may receive the 12b-1 fees in connection with my investment in such fund's shares. If I invest online in no-transaction-fee mutual funds ("NTF funds") directly through you, I will not pay a transaction fee. I also may be able to purchase mutual funds directly from the fund's distributor or underwriter without incurring a transaction fee. You receive remuneration from fund companies participating in the NTF fund program. NTF funds have other fees and expenses that apply to continued investment in the fund that are described in the prospectus. TD Ameritrade receives remuneration from certain ETFs (exchange-traded funds) that participate in commission-free ETF program for shareholder, administrative, and other services.

j. Sweep Program. My available cash may be swept into a sweep vehicle pending investment of the cash. The alternatives available under the Sweep Program are referred to as "Sweep Choices," and the one I select is referred to as the "Designated Sweep Vehicle." You will notify me of the Sweep Choices and the Designated Sweep Vehicle. I agree that at account opening my Designated Sweep Vehicle will be the TD Ameritrade FDIC Insured Deposit Account (described below), unless I select a different Sweep Choice.

Cash will be automatically invested or deposited in the Designated Sweep Vehicle, according to a sweep schedule determined by you. Proceeds from the sale of securities will be swept into the Designated Sweep Vehicle following settlement if the securities sold have been received in good deliverable form by the settlement date. The proceeds of any checks that I deposit to my Account will be swept to the Designated Sweep Vehicle on the Business Day after receipt by you and will begin earning dividends or interest on that day. Access to such funds may be withheld for up to four Business Days to assure that such checks have not been returned unpaid. I may instruct you to change my Designated Sweep Vehicle at any time to another of the Sweep Choices, and acknowledge that such instruction shall constitute my authorization to liquidate balances in my Designated Sweep Vehicle and transfer such balances to the new Designated Sweep Vehicle. I authorize you to automatically withdraw cash or redeem securities maintained in a Designated Sweep Vehicle to satisfy my obligations. I authorize you to act as my agent to purchase and redeem balances in the Designated Sweep Vehicles, and authorize you to select and use agents as you deem appropriate.

The Sweep Choices may include money market funds or an FDIC-insured deposit account ("IDA") for which you or your affiliates receive, to the extent permitted by Applicable Rules, transaction, and other fees for providing services. These fees will vary depending on the money market fund (or share class) or IDA used. No portion of these fees will reduce or offset the fees otherwise due to you unless required by Applicable Rules.

There may be certain minimum requirements for initial and subsequent investments in the Designated Sweep Vehicles. You may change the eligibility criteria or replace the Sweep Choices available to me. You will give me advance notice of any such change in Sweep Choices. Unless I notify you of an objection to such change, I authorize you to withdraw cash or redeem securities held in the prior Designated Sweep Vehicle and to invest or deposit the proceeds in the replacement Designated Sweep Vehicle.

If my Designated Sweep Vehicle is a money market fund or IDA, and my Account is flagged as a "Pattern Day Trader," on the next Business Day, you may change my Designated Sweep Vehicle to TD Ameritrade Cash (described below).

1. TD Ameritrade FDIC Insured Deposit Account. If the IDA is my Designated Sweep Vehicle, the available cash in my Account will be automatically deposited into an IDA at one or more banks ("Program Banks"). You will maintain a list of the current Program Banks on your website. The IDAs at the Program Banks are savings or checking accounts held in the name of Clearing as agent for its customers. You have arranged the IDAs and account records in such a way that "pass through" FDIC insurance is available to me as if I had opened the IDAs directly with a Program Bank in my own name. As a result, my funds at each Program Bank will be eligible for FDIC insurance in an amount equal to \$250,000 for principal and accrued interest per depositor in each recognized legal capacity (for example, Individual, Joint, IRA). The bank sweep program has been structured to provide me with access to at least two Program Banks resulting in up to \$500,000 in FDIC insurance per depositor in each recognized legal capacity (for example, up to \$500,000 for individual accounts and \$1,000,000 for joint accounts). Subject to deposit limits pursuant to agreements with the Program Banks, to the extent that my cash is being deposited into more than two Program Banks, it is possible for me to obtain total FDIC insurance in excess of \$500,000 per depositor in each recognized legal capacity. In addition, you will determine the order of the Program Banks in the IDA for the purposes of accepting deposits based on several factors including, but not limited to, minimum and maximum deposit balances agreed to with a particular Program Bank and the contractual arrangement between you and a particular Program Bank. Such FDIC insurance will cover my money in each IDA, together with any other deposits held at each Program Bank in the same legal capacity (for example, Individual, Joint, IRA). Questions about FDIC insurance coverage may be directed to you. Information also may be obtained by contacting the FDIC, by letter (550 17th Street NW, Washington, D.C. 20429), by phone (877-275-3342, 800-925-4618 ([TTY]), by email (dcainternet@fdic.gov), or by accessing the FDIC website at fdic.gov. Learn more about FDIC coverage by using the FDIC's Electronic Deposit Insurance Estimator at 5.fdic.gov/edie/.

My available cash will be deposited into an IDA at one or more Program Banks. You will deposit up to \$247,500 in the Program Banks, per depositor per legal capacity, except for "the Excess Bank" which will receive deposits without limit, even if the amount in the IDA exceeds the FDIC insurance available to me. The list of Program Banks including "the Excess Bank" is included on your website at tdameritrade.com/idadprogrambanks. Any deposits (including certificates of deposit) that I maintain in the same insurable capacity directly with a Program Bank, or through an intermediary (such as you or another broker), will be aggregated with deposits in my IDA at such Program Bank for purposes of determining my maximum FDIC insurance amount. I am responsible for monitoring the total amount of deposits that I maintain at the Program Banks in order to determine the extent of FDIC coverage available to me. I acknowledge that the IDAs constitute an obligation of the Program Banks and are not your obligation. I can obtain publicly available financial information concerning each Program Bank at ffiec.gov/nic or by contacting the FDIC Public Information center by mail at L. William Seidman Center, Virginia Square, 3501 North Fairfax Drive, Arlington, VA 22226 or by phone at 703-562-2200. You do not guarantee in any way the financial condition of the Program Banks or the accuracy of any publicly available financial information concerning the Program Banks. You will not be responsible for any insured or uninsured portion of the IDAs. Cash in my Account will be automatically swept on a daily basis to the IDAs at the Program Banks. As required by federal regulations, the Program Banks have the right to require seven days' prior notice before permitting a withdrawal out of a savings account. Currently, the Program Banks do not intend to exercise this right. In addition, savings accounts you hold as agent for me at a Program Bank may have transfer limits that prevent using such accounts as a transaction account. The following applies to the IDAs:

- When available cash is available for deposit, you will deposit available cash from my Account into an IDA at one or more Program Banks. You will periodically rebalance my IDAs so the total amount of my funds in the IDA at Program Banks remains below applicable FDIC insurance limits (except for the Excess Bank, which has no limit).
- All withdrawals necessary to satisfy debits in my Account will be made by Clearing, as my agent. A debit will be created when I purchase securities or request a withdrawal of funds from my Account.
- My account statement will display the name of each Program Bank with which I have deposits, the balance of deposits at each Program Bank, any withdrawals made during the month, and the applicable interest rate and amount of interest earned on my deposits.
- The deposit limit at the Program Banks is set slightly below FDIC-insurance thresholds to allow for accrued interest on deposits. The deposit limit at the Program Banks is set at \$247,500 (\$495,000 for Joint Accounts), which may be reset from time to time based on FDIC-insurance limits and the interest rate environment. If interest paid on my funds in the IDA at one of the Program Banks results in my total funds in the IDA exceeding the deposit limit at another Program Bank, the IDAs will be rebalanced the next day and the amounts in excess of the deposit limit will be transferred to another Program Bank.
- I may not change the Program Banks, the order in which funds are deposited into the Program Banks, or the maximum deposit amount at any Program Bank. I may withdraw from the bank sweep program at any time and use another Sweep Choice.
- I will earn interest on my deposits in the IDAs in accordance with the rates or tiered rates available to me as determined by you. I understand that rates may vary based on the particular offering or the level of my assets held with you. Interest rates earned in the IDAs will vary over time, but will be paid consistent with the rate or tiered rate you make available to me regardless of which Program Bank holds my cash. The interest rates paid with respect to the IDAs may be higher or lower than the interest rates available to depositors making deposits directly with the Program Banks or other depository institutions in comparable accounts. The current interest rate will be available on the websites, or I may contact you to obtain the current rate. Interest will accrue on balances from the day they are deposited into the IDAs through the Business Day preceding the date of withdrawal from the IDA. Interest will be accrued daily and credited on the last Business Day of each month. You use the daily balance method to calculate interest on my Account.
- Clearing will act as my agent in depositing funds into the IDAs and withdrawing funds from the IDAs. No evidence of the IDAs, such as a passbook or certificate, will be issued to me. Ownership of the IDAs at the Program Banks will be evidenced by a book entry on the records of the Program Banks, and by records maintained by Clearing. I will contact you if I believe there has been any unauthorized activity between my Account and the IDAs, or if I have any complaints regarding the IDAs at the Program Banks.
- You may terminate my use of the IDA sweep feature. If you terminate my use of the IDA sweep feature, or do not wish to continue to act as my agent with respect to the IDA, I may deal directly with the Program Banks, subject to their rules, with respect to establishing and maintaining deposit accounts. In the event you terminate my use of the IDA sweep feature, you will inform me of the replacement Sweep Choice. Similarly, if I decide to terminate my use of the IDA sweep feature, or that I no longer wish to have Clearing act as my agent with respect to the IDAs, I may establish a direct depository relationship with the Program Banks, subject to the Program Banks' rules. Establishing a direct depository relationship with the Program Banks will result in the separation of my deposit balances at the Program Banks from my Account.
- The Program Banks use IDA balances to fund current and new investment and lending activity. The Program Banks seek to make a profit by achieving a positive spread between their cost of funds (for example, deposits) and the return on their assets, net of expenses. You receive a fee from the Program Banks that ranges from 0.85 to 1.20%. You have the right to waive all or part of this fee. The rate of the fee that you receive may exceed the interest rate or effective yield that I receive in my balances in the IDAs, and the payment of the fee reduces the yield that I receive. Other than the applicable fees charged on brokerage accounts, there will be no charges, fees, or commissions imposed on my Account for this Sweep Choice. The current IDA interest rate will be disclosed on your website and may be changed without prior notice.
- My deposit into IDAs at the Program Banks may need to be limited if one or more Program Banks stop accepting deposits. You will provide advance notification via the website, or other reasonable means, if any Program Bank is removed from the bank sweep program, and if advance notice is not practicable, you will notify me as soon as is reasonably practicable. If a Program Bank ceases to make its IDA available through the IDA sweep feature, I will be given an opportunity to establish a direct relationship with that Program Bank outside of the IDA sweep feature, or to transfer funds to another Program Bank participating in the IDA sweep feature, if available.
- In the event that FDIC insurance payments become necessary, the FDIC is required to pay principal plus unpaid and accrued interest to the date of the closing of the relevant Program Bank, as prescribed by applicable laws and regulations. Because there is no specific time period during which the FDIC must make available such insurable payments, I should be prepared for the possibility of an indeterminate delay in obtaining insurable payments. In addition, I may be required to provide certain documentation to the FDIC and you, such as affidavits and indemnities, before any insurance payouts are released to me. For example, if the IDA balances are held by me as trustee for the benefit of trust participants, I may be required to furnish an affidavit to that effect.
- You may change the bank sweep program terms and conditions by providing me 30 days' advance notice.

2. **TD Ameritrade Cash.** If I selected TD Ameritrade Cash as my Designated Sweep Vehicle, you will pay interest on available cash in my Account, the rate of which may be changed without prior notice. Interest will be accrued daily and credited on the last Business Day of each month. You may vary interest rates among clients in connection with special offers or combinations of services or in other circumstances. TD Ameritrade Cash represents balances pending investment and is not maintained solely for receiving credit interest. You segregate customer cash consistent with the Securities and Exchange Commission rules and regulations.
3. **Money Market Funds.** Investments in money market funds are subject to eligibility and other restrictions, as well as charges, and expenses, all as further described in the prospectus. Money market funds are securities that may increase or decrease in value. They are not insured or guaranteed by the FDIC, any other government agency, or you, and there can be no assurance that such funds will be able to maintain a stable net asset value of \$1 per share. I understand that I will receive period statements for sweep transactions involving money market funds in lieu of immediate confirmations.

k. Callable Securities. I consent to your lottery system for allocation of partial redemption or calls. A description of your procedures for callable securities is available on your website, or hard copies are available upon request.

9. MARGIN TRADING

a. Margin Account. When I purchase securities on margin, I am borrowing money from you and pledging all securities and other property in my Account as collateral for these loans. I agree to evaluate my own financial situation, resources, investment objectives, and other relevant circumstances to determine whether margin transactions are appropriate for me. You will not make this determination. Even if I determine that margin is appropriate for me, you determine whether to make such loans to me. I also understand that trading securities on margin involves a variety of risks, including the following:

1. **I can lose more funds than I deposit in the margin Account.** A decline in the value of securities that I purchase on margin may require me to provide additional funds to you to avoid the forced sale of those securities or other securities or assets in my Account. I could lose more than the amount I deposit in my Account.
2. **You can force the sale of securities or other assets in my Account.** If the equity in my Account falls below the maintenance margin requirement, or any higher "house" requirements, you can sell the securities or other assets in any of my Accounts to cover the margin deficiency. I also will be responsible for any shortfall in the Account after such a sale.
3. **You can sell my securities or other assets without contacting me.** Some investors mistakenly believe that a firm must contact them for a margin call to be valid, and that the firm cannot liquidate securities or other assets in their accounts to meet the call unless the firm has contacted them first. This is not the case. Although you may attempt to notify me of margin calls, you are not required to do so, and even if you have contacted me and provided a specific date by which I can meet a margin call, you can still take necessary steps to protect your financial interests, including immediately selling securities without notice to me.
4. **I am not entitled to choose which securities or other assets in my Account are liquidated or sold to meet a margin call.** Because the securities are collateral for my margin loan, you have the right to decide which securities to sell in order to protect your interests.
5. **You can increase your "house" maintenance margin requirements at any time, and you are not required to provide me advance written notice of the change.** These changes to your policy often take effect immediately and may result in the issuance of a maintenance margin call. My failure to satisfy the call may cause you to liquidate or sell securities in my Account.
6. **I am not entitled to an extension of time on a margin call.** While an extension of time to meet margin requirements may be available to clients under certain conditions, I do not have a right to any extension. You will determine whether to provide an extension.

b. Initial Margin and Margin Maintenance Requirements. There are rules and regulations covering margin loans, including the initial and margin maintenance requirements for margin Accounts. You may impose more stringent margin requirements, which may change without notice to me. To trade on margin, my Account must maintain at least \$2,000 in minimum equity. I will meet the margin requirement in my margin Account before entering any order and will satisfy any additional requirements you may require. You may apply all premiums received from options writing against my margin requirements. I have the obligation to monitor the balances in my margin Account to ensure that I maintain sufficient amounts to meet margin requirements at all times. I agree to read carefully the TD Ameritrade Margin Handbook before purchasing securities on margin.

You may decline to extend credit to me for any reason, subject to Applicable Rules. There may be times when you have extended credit on certain securities, but due to market or other conditions, you may require additional cash or securities.

c. Margin Interest. I will pay interest on any credit provided to me for the purpose of purchasing, carrying, or trading in any security.

d. Margin Interest Rates. You utilize a base rate ("Base Rate") to set margin interest rates. My margin interest rate will vary based on the Base Rate and the margin balance ("Balance") in my margin Account during the interest period. The Base Rate may be changed without prior notice to me. You will post on the websites any changes to the Base Rate.

e. Interest Calculation. For each day there is a debit balance in my Account, the interest charged for that day is calculated by multiplying the applicable interest rate by my debit balance, with the result divided by 360. The sum of the daily interest charges is totaled at the end of each Account statement period and is posted to my Account on the last Business Day of the Account statement period. I will not earn interest on credit balances in my short Account.

f. Short Sales. Sales designated as "short" are done in my margin Account, and are subject to different margin maintenance requirements than securities purchased on margin. Short sales are subject to certain regulatory rules and cannot be executed under certain market conditions. You may not always have the securities available to facilitate my short sale. You may, without notice, "buy-in" securities to cover any short security position in my Account. I will reimburse you for any losses that you may incur. You may require me to deposit Collateral if the Collateral in my Account becomes insufficient. Short sale proceeds are part of the Collateral that secures your loan to me. I am also liable for all dividends paid, and all other distributions of cash or property, on securities that I have sold short.

g. Pledge of Securities and Other Property. You may pledge, repledge, hypothecate, or re-hypothecate, without notice to me, all securities and other property that you hold, carry, or maintain or for any of my margin or short Accounts. You may do so without retaining in your possession or under your control for delivery the same amount of similar securities or other property. The value of the securities and other property that you may pledge, repledge, hypothecate, or re-hypothecate may be greater than the amount I owe you, and any losses, gains, or compensation that result from these activities will not accrue to my Account.

h. Loan of Securities. You are authorized to lend to yourself or others any securities you hold in my Account and to carry all securities lent as general loans. In connection with such loans, you may receive compensation and retain certain benefits that I will not be entitled to, such as interest on Collateral posted for such loans. In certain circumstances, such loans may limit my ability to exercise voting rights with respect to the securities lent. I may request that fully paid securities not be used in connection with short sales. I understand that in certain situations in which you have borrowed my securities, I may receive a "payment in lieu" of the dividend issued (see Margin Handbook for more details).

10. OPTIONS TRADING

If I elect to engage in options transactions, I will be bound by the following additional terms:

a. Suitability. Options are not suitable for all investors. Options trading has inherent risks and I am prepared financially to undertake such risks and to withstand the losses that may be incurred. I acknowledge I have received or have been given access to the "Characteristics and Risks of Standardized Options" by the Options Clearing Corporation (OCC).

b. General Terms.

- I am responsible for knowing the rights and terms of all options in my Account. I agree to be bound by the FINRA, OCC, and exchange rules applicable to the trading of options contracts.
- If my options trading occurs in a margin Account, it is subject to the terms and conditions applicable to margin trading.
- Settlement on options cleared through the OCC is the Business Day after the trade date. I shall not exceed the position and exercise limits imposed by the rules of the OCC.
- I am responsible for instructing you as to my intention to exercise options contracts before the expiration date. Absent proper and timely exercise instructions from me, you have no obligation to exercise any right, privilege or obligation of any option for my Account. I agree that my failure to provide you with proper and timely instructions may result in the option expiring worthless, even though it may have a monetary value on the expiration date. I agree to read carefully the Margin Handbook for additional terms and important information regarding options exercise.
- You collect information only to establish option trading permission and not for the purpose of monitoring Account holdings or option positions.
- You and Clearing are authorized to take steps to protect their position and any obligation they have assumed at my request without notifying me.
- If I write (short) a call options contract that requires the delivery of securities to be sold, I may be required to keep the securities in my Account until the expiration of the options period and may not be allowed to sell or withdraw the securities.
- If I write (short) a put options contract that requires payment for securities to be purchased, I may be required to keep sufficient funds in my Account to make the payment until the expiration of the options period, and may not be allowed to withdraw the funds or use them for any other purpose. If I am assigned on the options, Clearing may use the funds for the purchase of the securities without prior notice to me.
- All short equity and some index options positions are available for assignment. Exercise assignment notices for equity or index options are randomly allocated among all clients' short positions.

11. INITIAL PUBLIC AND FOLLOW-UP OFFERINGS

You may participate as underwriter or a member of the selling group of, and provide access to, Initial Public Offerings (IPOs) and follow-up offerings. If I participate in such, I will be bound by additional terms.

12. ARBITRATION

This Agreement contains a predispute arbitration clause. By signing an arbitration clause, the parties agree as follows:

- All parties to this Agreement are giving up their right to sue each other in court, including the right to jury trial, except as provided by the rules of the arbitration forum in which a claim is filed.
- Arbitration awards are generally final and binding; a party's ability to have a court reverse or modify an arbitration award is very limited.
- The ability of the parties to obtain documents, witness statements, and other discovery is generally more limited in arbitration than in court proceedings.
- The arbitrators do not have to explain the reason(s) for their award unless, in an eligible case, a joint request for an explained decision has been submitted by all parties to the panel at least 20 days prior to the first scheduled hearing date.
- The panel of arbitrators may include a minority of arbitrators who were or are affiliated with the securities industry.
- The rules of some arbitration forums may impose time limits for bringing a claim in arbitration. In some cases, a claim that is ineligible for arbitration may be brought in court.
- The rules of the arbitration forum in which the claim is filed, and any amendments thereto, shall be incorporated into this Agreement.
- No person will bring a putative or certified class action to arbitration, nor seek to enforce any predispute arbitration agreement against any person who has initiated in court a putative class action; or who is a member of a putative class who has not opted out of the class with respect to any claims encompassed by the putative class action until: (1) the class certification is denied; (2) the class is decertified; or (3) the client is excluded from the class by the court. Such forbearance to enforce an agreement to arbitrate will not constitute a waiver of any rights under this Agreement except to the extent stated herein.

I agree that any controversy between you and your affiliates, any of their respective officers, directors, employees, or agents and me (including any of my officers, directors, employees, or agents) arising out of or relating to this Agreement, our relationship, any Services provided by you, or the use of the Services, and whether arising before or after the date of this Agreement, shall be arbitrated and conducted under the provisions of the Code of Arbitration of the FINRA. If any party unsuccessfully resists confirmation or enforcement of an arbitration award rendered under this Agreement, then that party shall pay all costs, attorneys' fees, and expenses incurred by the other party or parties in confirming or enforcing the award.

Arbitration must be initiated by service upon the other party of a written demand for arbitration or notice of intention to arbitrate. Judgment, upon any award rendered by the arbitrator, may be entered in any court having jurisdiction.

13. ADVICE

- a. Unless otherwise noted by you in writing, you will act only as broker-dealer and not as an investment advisor governed by the Investment Advisers Act of 1940.
- b. When I act as a self-directed investor, I am responsible for determining the suitability of any particular investment strategy, transaction, or security. You have no responsibility for any such determination unless you otherwise agree in writing, or you or your representative gives advice directly to me that is identified clearly as a recommendation by you to enter into a particular transaction or to buy, sell, or hold a particular security or securities.
- c. From time to time, in connection with my Account, you may provide investment-related guidance or recommendations to me. In the event that a recommendation is made, you and/or your representative shall have my informed consent to deliver the Form CRS Customer Relationship Summary for TD Ameritrade or its affiliates, as required ("Form CRS") - as well as any other notices, disclosures, or communications - to any mailing address, email address or facsimile number that I provide in connection with either the Account, or any other accounts that I open or otherwise maintain with you. I understand that I can also access the Form CRS by visiting tdameritrade.com/regbi. I understand and acknowledge that it is incumbent on me to provide you with current and accurate contact information for the delivery of these documents. I acknowledge that I shall read and understand the Form CRS - as well as any other notices, disclosures, or communications - prior to acting upon any such recommendation. I agree that when you make a recommendation to me, you determine whether it is suitable and in my best interest at the time of the recommendation. If the recommended transaction is not effected contemporaneously with your recommendation, I agree you will have no liability if I choose to effect such transaction in the future. Furthermore, when you are acting as broker-dealer for my Account, I agree that you have no ongoing duty to ensure a recommendation continues to be suitable for me. Rather, I have an affirmative duty to monitor profits and losses in my Account, along with my investment goals and risk tolerance and to modify my trading decisions accordingly.
- d. Unless otherwise agreed to in writing, you do not have discretionary authority over my Account or an obligation to monitor, review or make recommendations for the investment of securities or cash in my Account.
- e. Any research, analysis, news, or other information made available by you does not constitute an individualized recommendation by you to buy, sell, or hold a particular security.
- f. You do not provide legal, tax, or estate planning advice.

14. MISCELLANEOUS

- a. **Severability.** If any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws, such provisions shall be fully severable. In such event: (1) this Agreement shall be construed and enforced as if such illegal, invalid, or unenforceable provision has never comprised a part of this Agreement or was modified to be legal, valid, and enforceable; and (2) the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provisions or by its severance from this Agreement, to the extent permitted by Applicable Rules.
- b. **Account Handbook.** The Account Handbook provided to me upon account opening, and available on your websites, contains important information about my Account. I will refer to the Account Handbook to learn additional information about the handling of trade orders, the receipt and delivery of funds, account policies, and other general account information.
- c. **Entirety of Agreement.** This Agreement, any attachments hereto, the addenda and other agreements referred to in this Agreement and the terms and conditions contained in the Account statements and confirmations contain the entire agreement between you and me; and it supersedes all prior or contemporaneous communications and proposals, whether electronic, oral, or written, between me and you, provided, however, any and all other agreements if any, between me and you and your affiliates, not inconsistent with this Agreement will remain in full force and effect, and if there are any conflicts between this Agreement and any attachments or other agreements, this Agreement shall prevail.
- d. **Assignment and Escheatment.** I may not assign this Agreement or any rights or obligations under this Agreement without first obtaining your prior written consent. You may assign, sell, or transfer my Account and this Agreement, or any portion thereof, at any time, without my prior consent. The assets in my Account may be transferred to the appropriate state if no activity occurs in my Account within the time period specified by state law.
- e. **Amendment.** You reserve the right to amend this Agreement without prior notice to me or as required by Applicable Rules. The current version of the Agreement will be posted on the websites and my continued Account activity after such amendment constitutes my agreement to be bound by all amendments to the Agreement, regardless of whether I have actually reviewed them. You are not bound by any verbal statements that seek to amend the Agreement.
- f. **Termination.** You may terminate this Agreement, or close, deactivate, or block access to my Account. If you decide to close my Account and I fail to transfer it to another broker, you may liquidate my Account and send me the proceeds. I will remain responsible for the payment of all obligations incurred in my Account or otherwise. I may terminate this Agreement after paying any obligations owed upon written notice. The Agreement survives termination of the Account.
- g. **Force Majeure.** You will not be liable for loss caused directly or indirectly by conditions beyond your reasonable control, including but not limited to Force Majeure events. "Force Majeure" means events that are beyond the reasonable control of a party, including but not limited to the following: disasters, extraordinary weather conditions, earthquakes or other acts of God, war, insurrection, riot, labor strikes, terrorist acts, government restrictions, exchange or market rulings, suspension of trading, computer or communication line failure, or failure of market centers or transmission facilities.
- h. **Indemnification.** I agree to indemnify and hold harmless you, your affiliates, and Third-Party Providers and your and their respective officers, directors, employees, agents, and representatives from any and all liabilities, losses, costs, judgments, penalties, claims, actions, damages, expenses, or attorney's fees (collectively "Losses") resulting or arising directly or indirectly from use of the Services or transactions in my Account, except to the extent that such Losses are the direct result of your gross negligence or willful misconduct.
- i. **Waiver.** Your failure to insist on compliance with this Agreement will not constitute a waiver of any of its rights.
- j. **Admissibility of Documents in Proceedings.** All documents in any format are considered to be true, complete, valid, authentic, and enforceable records of the applicable document, admissible in judicial or administrative proceedings to the same extent as if the documents and records were originally generated and maintained in printed form. I will not contest the admissibility or enforceability of your copy of the documents in any proceeding arising out of this Agreement.
- k. **Governing Law, Jurisdiction, and Venue.** This Agreement will be governed by the laws of the State of Nebraska, but not its conflicts of law provisions. I hereby consent to the jurisdiction of and venue within the State of Nebraska for all disputes arising out of or relating to this Agreement.

I. NJ State Law. New Jersey law prohibits contractual provisions that violate the legal rights of a NJ consumer or responsibility of a seller. No provision in this Agreement shall apply to any NJ consumer if it violates any such right or responsibility, including grounds for redress based on: (i) your tortious actions; (ii) the NJ Punitive Damages Act; (iii) the NJ Uniform Commercial Code; or (iv) your failure to protect reasonably against criminal acts of third parties.

m. Worthless Securities. You may remove a worthless security from my account including, and without limitation to, the following circumstance: your primary custodian, the Depository Trust Company, has deemed the security eligible for removal and you have reviewed and determined, to the best of your ability, that the security has no market value. I agree to waive any claim to any future distribution from the security and agree to indemnify and hold you harmless from any claims, liability, or damages resulting from the removal of such security. If I provide you with evidence of the value of the security from an independent third party within 60 days of receiving your account statement noting the removal, you will review and, if able to, reinstate my position.

Investment Products: Not FDIC Insured * No Bank Guarantee * May Lose Value

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EXHIBIT

1-E



Client Agreement

PO Box 2760 ■ Omaha, NE 68103-2760
 Fax: 866-468-6268

1. INTRODUCTION

This Agreement governs all brokerage accounts that I open with you, all transactions in my Account, the use of your websites, the Brokerage Services, the TD Ameritrade Content, and the Third-Party Content; is binding on my heirs, executors, administrators, successors, and assigns; and will inure to the benefit of your successors. By opening an Account with you, I acknowledge that I have received, read, and understand this Agreement and agree to be bound by its terms. Accounts opened with the TD Ameritrade Institutional Division are governed by a separate agreement.

"I," "me," "my," or "account owner" means each account owner who signs the Account Application. **"You," "Your," or "TD Ameritrade"** means TD Ameritrade, Inc., and, when applicable, TD Ameritrade Clearing, Inc. ("Clearing"), TD Ameritrade's clearing broker-dealer.

2. DEFINITIONS

"Account" means each brokerage account I open with you or have an interest in.

"Agreement" means these terms and conditions as well as any supplemental agreements and disclosures that apply to my Account, as amended from time to time.

"Applicable Rules" means all applicable federal and state laws, rules and regulations, rules of any self-regulatory organization, and the constitution and applicable rules, regulations, customs, and usages of the exchange or market and its clearinghouse.

"Brokerage Services" means your website and related services that you provide other than TD Ameritrade Content, which I need to place trades in my Account.

"Business Day" means Monday through Friday, excluding market holidays.

"Services" means, collectively, the websites, the Brokerage Services, the TD Ameritrade Content, and the Third-Party Content. This Agreement applies to the Services provided by you regardless of how I access them (for example, in person, phone, Internet, or by mobile device).

"TD Ameritrade Content" means all information, tools, and services available on your website, other than Brokerage Services provided by you, and not by a third party.

"Third-Party Content" means all information, tools, and services available on your website that are provided by a third party ("Third-Party Provider"), including financial and investment tools, market data, reports, alerts, calculators, access to online conferences, telecasts, bulletin boards, tax preparation, or account management tools.

"websites" means the Internet sites of TD Ameritrade, whose domain name is registered as <http://www.tdameritrade.com>, and others, and through which you offer Services.

3. MY ACCOUNT AND RELATIONSHIP WITH YOU

a. Self-Directed Account. I understand that Accounts opened with you are self-directed. I am responsible for all purchase and sell orders, decisions to continue with an investment strategy or to hold an investment, and instructions placed in my Account. Unless you provide advice to me that is clearly identified by you as an individualized recommendation for me, any investment decision that I make or investment strategy that I utilize, including the decision to hold any and all of the securities or derivatives in the Account, is based on my own investment decisions or those of my agent and is at my own risk. All investments involve risk, and unless you provide individualized recommendations to me, I or my agent are responsible for determining the suitability of any trade, investment, investment strategy, and risk associated with my investments. TD Ameritrade Content or Third-Party Content I access through you does not constitute a recommendation to invest in any security or derivative, or to utilize any investment strategy.

b. Fees and Commissions. I will pay commissions, charges, taxes, and other fees applicable to my Account. Current commission pricing and other fees are on the websites. You may change your fees and commissions at any time by posting changes on the websites or by other means.

You reserve the right to vary commissions among clients in connection with special offers or combinations of services or in other circumstances. You or Clearing may pay a portion of the revenues or fees derived from servicing my Account to third parties that provide services to you or Clearing. If my Account is an IRA or other retirement plan account, my Account may be charged fees that the particular plan has authorized to be paid to service providers other than you or Clearing.

c. Statements and Confirmations. It is my obligation to review trade confirmations and Account statements promptly upon receipt. These documents will be considered binding on me unless I notify you of any objections within five days from the date confirmations are sent and within 10 days after Account statements are sent.

d. Instructions.

1. General. You may accept and act on instructions from me, my agent, or any person authorized on my Account. You may refuse any order, or delay placing any order, if you determine that an order requires clarification from me. I will not hold you responsible for any losses caused by the rejection or delay. You will not receive any order or instruction transmitted by my agent or me until you have actual knowledge of the order or instruction. You do not determine the validity of my agent's status or capacity, the appropriateness of, or the authority or actions by such person.

2. Wire Transfers. By initiating a wire transfer from my Account with or without a letter of instruction, I agree that you may use security procedures for accepting and acting upon wire transfer instructions. I agree that such security procedures may include one, some, or all of the following, depending on the type, amount, and frequency of the wire transfer request: requestor and/or account owner identification and verification; requestor and/or account owner signature comparison or verification; confirmation of receiving bank and/or account designation; notice provided via email, message center, or phone to account owner and/or authorized agent; account surveillance and/or trending analysis. In some circumstances, you may place limits on the portability of funds and additional documentation may be required.

I agree that the above security procedures are commercially reasonable under the circumstances. I agree to be bound by instructions to initiate a wire transfer, with or without a letter of instruction, whether in fact authorized or unauthorized, which you implement in compliance with these procedures, unless I have given you prior notice of possible unauthorized activity in my Account and you have a reasonable opportunity to act on such notice.

3. ACH Transactions. From time to time, originators that I authorize may send ACH credits or debits to my account. For each ACH transaction, I agree it is subject to the NACHA Operating Rules and Guidelines or other funds transfer system rules as applicable, and that the following additional terms shall apply: (1) TD Ameritrade's payment of a funds transfer to my account will be provisional until TD Ameritrade receives final settlement or payment, and I agree that TD Ameritrade may reverse the provisional credit and/or obtain reimbursement from me if you do not receive final settlement or payment; (2) A payment by the beneficiary's bank of a funds transfer from my account to the beneficiary will be provisional until final settlement has been made or until payment is considered received under applicable law, and I agree that the beneficiary's bank may reverse its provisional credit and obtain a refund from the beneficiary and I, as the originator of the payment, will not be considered to have paid the beneficiary; (3) I hereby authorize any Originating Depository Financial Institution (ODFI) to initiate, pursuant to ACH operating rules, ACH debit entries to my account for electronic presentation or re-presentation of items written or authorized by me; and (4) If I receive an unauthorized debit, I will need to file a written unauthorized debit statement with TD Ameritrade by contacting TD Ameritrade at 1-800-669-3900

e. No Endorsement of Day Trading Strategy; Representations. You do not recommend, endorse, or promote a "day trading" strategy, which may involve significant financial risk to me. If I accumulate a position in a security through multiple purchase transactions in one day and subsequently liquidate and/or close out that position on the same day through a single sale transaction, I represent that it is my intent to execute a single day-trade, unless I notify you to the contrary.

f. Clearing Agreement. You and Clearing have entered into a clearing agreement in which Clearing is the clearing agent for securities transactions for your clients. You transmit client instructions to Clearing which causes such instructions to be executed. Clearing carries my Account on a fully disclosed basis. All securities, dividends, and proceeds will be held at Clearing unless otherwise instructed.

g. Trading in Affiliate Securities. If I transact in securities that are issued by TD Ameritrade Holding Corporation, or The Charles Schwab Corporation ("CSC") or an entity controlled by CSC, I acknowledge and understand that You are controlled by CSC, and/or You and the issuer are under the common control of CSC.

h. Account Protection. You are a member of the Securities Investor Protection Corporation ("SIPC"), which protects securities customers of its members up to \$500,000 (including \$250,000 for claims for cash). An explanatory brochure is available on request at sipc.org. Additionally, you provide each client \$149.5 million worth of protection for securities and \$2 million of protection for cash through supplemental coverage provided by London insurers. In the event of a brokerage insolvency, a client may receive amounts due from the trustee in bankruptcy and then SIPC. Supplemental coverage is paid out after the trustee and SIPC payouts and under such coverage each client is limited to a combined return of \$152 million from a trustee, SIPC, and London insurers. The TD Ameritrade supplemental coverage has an aggregate limit of \$500 million over all customers. This policy provides coverage following brokerage insolvency and does not protect against loss in market value of the securities.

To obtain information about the SIPC, including the SIPC brochure, I can contact the SIPC at:

Securities Investor Protection Corporation
805 15th St, N.W., Suite 800
Washington, D.C. 20005-2215

Tel: 202-371-8300
Fax: 202-371-6728
Email: ask@sipc.org
Website: sipc.org

i. Beneficiary Designation. Changes in the relationship between the account owner and designated beneficiary (such as, marriage, divorce, or adoption) will not automatically add or revoke beneficiary designations. For example, if an account owner designated a spouse as beneficiary and they subsequently divorced, the former spouse will remain beneficiary on the Account unless the account owner submits a new beneficiary designation to you.

j. Compliance with Laws. I agree to comply with all laws, rules, and regulations applicable to my Account.

4. ABOUT ME

a. Legal Capacity. I am of legal age in the jurisdiction in which I reside and have the capacity and authority to enter into this Agreement.

b. Accuracy of Information. All the information I provide you is true and correct. I will promptly notify you in writing within 10 Business Days after any change in such information. You may rely upon all information I provide you.

c. Interest in Account. I represent that no one except me (us) has an interest in any of my (our) Account(s) (unless I am opening the Account as a fiduciary).

d. Multiple Owners. If there is more than one Account owner, then the provisions of the Agreement apply to each owner. Accounts of husbands and wives in community property states will be held in the name of husband and wife as community property unless we instruct you otherwise; any other Joint Account will be held jointly with rights of survivorship unless I notify you of a different form of ownership and provide such documentation as you require. You will have no liability for any loss that may arise due to taking instructions from one owner or requiring instructions from all owners. If I am married, I may establish an account with my spouse as tenants by entirety. I will notify you if I become legally divorced.

e. Rights, Terms, and Obligations of Securities in Account. Except as required by Applicable Rules, you are not obligated to notify me of any events involving my securities positions, nor do you have the responsibility to take any actions on my behalf with respect to such events without specific instructions from me. I am responsible for knowing the rights, terms, and obligations of securities in my Account and for monitoring the occurrence of any events involving my securities positions or securities for which I intend to place an order.

5. PRIVACY AND CONFIDENTIALITY

a. Privacy. You will take reasonable measures to protect the privacy and confidentiality of information in your possession about my Account and me. Your Privacy Statement explains how you collect and protect my information. The Privacy Statement is incorporated into this Agreement by reference.

b. Account Number, PIN, or Password. I will receive a password and/or access number (collectively "PINs") that provides electronic access to my Account. Account numbers, User IDs, and PINs are confidential, and I am responsible for the confidentiality, protection, and use of them. Subject to the TD Ameritrade Asset Protection Guarantee, I agree to be responsible for all activities in my Account. You may be assured that I have authorized any orders or instructions that are received under my Account number and PIN or by initiating an electronic transfer of funds, with or without a letter of instruction.

c. TD Ameritrade Asset Protection Guarantee. If I lose cash or securities from my Account due to unauthorized activity, you will reimburse me for the cash or securities I lose. You promise me this protection if unauthorized activity causes losses and you determine it was through no fault of my own. You promise this protection if I do four things: (1) keep my personal identifying information and Account information secure and confidential—because sharing my User ID, password, PIN, Account number, or other standard means of authentication with other people means I authorize them to take action in my Account; (2) keep my contact information up-to-date with you, so that you can contact me in case of suspected fraud; (3) review my Account frequently and my statements promptly and report any suspicious or unauthorized activity to you immediately in accordance with this Agreement; and (4) take the actions you request and cooperate with any investigation. I agree that unauthorized activity does not include any actions or transactions undertaken by or at the request of me, my investment advisors or family members, or anyone else whom I have allowed access to my Account or to my Account information for any purpose, such as trading securities, writing checks, or making withdrawals or transfers.

d. Phone Conversations and Electronic Communications. You may record and monitor any telephone, video, or electronic communications with me.

e. Credit Reports. I authorize you to request my credit reports to verify my creditworthiness and to provide information to credit agencies. Upon request, you will inform me whether a report was requested and provide me with the name and address of the credit-reporting agency that furnished the report. Negative credit information may be submitted to a credit-reporting agency if I fail to fulfill the terms of my credit obligations.

f. Disclosure of Account Information to Third Parties. Consistent with your Privacy Statement, you and your agents are specifically authorized to disclose information about my Accounts and me to third parties.

g. Trusted Contact Authorization. If I elect to provide Trusted Contact information to you, you are authorized to communicate, verbally and in writing, with the Trusted Contact Person(s) named on the applicable Trusted Contact Authorization Form, or by other such means as I may provide Trusted Contact information to you. I understand that any communication with the Trusted Contact Person(s) may include information about any of the Account Owners, the account for which the Trusted Contact information was provided, any other accounts at TD Ameritrade in which any of the Account Owners has an interest, or any other information the Account Owners may have provided to TD Ameritrade.

I understand that you may contact the Trusted Contact Person(s) for the following reasons: (1) if there are questions or concerns about my whereabouts or health status; (2) if you suspect that I may be a victim of fraud or financial exploitation; (3) if you suspect that I might no longer be able to handle my financial affairs; (4) to confirm the identity of any legal guardian, executor, trustee, authorized trader, or holder of a power of attorney; or (5) if you have any other concerns or are unable to contact me about my Account(s) held with you. If my Account is an Entity or other Non-natural person Account, you may also contact any Authorized Agent named on the Account for the foregoing reasons.

I further agree that: (1) the Trusted Contact Authorization does not impose any obligation that you communicate with my Trusted Contact Person(s); (2) the Trusted Contact Authorization does not authorize the Trusted Contact Person(s) to make any investment decisions or transact any business with you on my behalf; (3) the Trusted Contact Authorization is optional and I may change or withdraw it at any time by notifying you in writing; (4) all named Trusted Contact Person(s) are 18 years of age or older; (5) if there are multiple Account Owners, you are authorized to follow the instructions of any one or more Account Owners in adding a Trusted Contact, and you will not be held liable for information shared with a Trusted Contact, without regard to which Account Owner(s) authorized the addition of the Trusted Contact; and (6) you are released and discharged from all claims, causes of action, damages, losses, expenses, costs, and liabilities of any kind that may arise out of, relate to, or are in connection with the release of, or failure to release, personal and/or account information to the Trusted Contact Person(s).

6. CLIENT COMMUNICATIONS

a. Addresses. You may send communications to the mailing address, email, telephone number, or facsimile number that I provide. You also may deliver information verbally or via the Secure Message Center on your website. Communications shall be deemed delivered to me whether or not I actually receive them.

b. Electronic Signatures. My use of electronic signatures to sign your documents legally binds me in the same manner as if I had manually signed. The use of an electronic version of these documents fully satisfies any requirement that they be provided to me in writing. If I sign electronically, I represent that I have the ability to access and retain a record of the documents. I am responsible for understanding these documents and agree to conduct business with you by electronic means. I am obliged to review periodically the websites for changes or modifications.

c. Consent. By consenting to the electronic delivery of all information relating to my Account, I authorize you to deliver all communications to me by the following means: (1) by email at the email address specified by me; (2) by posting the communication on the websites or other sites on the Internet where the communication can be read and printed; (3) by sending me an email that includes a hyperlink to the websites or an address on the Internet where the information is posted, and can be read and printed; and (4) by sending me a notice that directs me to an address on the Internet or a place within the websites where the communication is posted and from which it can be read and printed. Such delivery will be an effective delivery to me for the purpose of any Applicable Rules whether or not I access or review the communication. Although I consent to electronic delivery, you may elect to deliver communications by other means which shall not affect my consent. I will notify you of any change in my address. I may revoke my consent to electronic delivery of communications and receive documents on paper. You have a reasonable period to effect such a change and may charge a reasonable fee for sending paper copies.

d. Equipment. If I agree to electronic delivery, I must have a computer with Internet access, an email address, and the ability to download and save or print communications to retain for my records. I am responsible for obtaining and maintaining all equipment and services required for online access of my Account.

7. ELECTRONIC SERVICES

a. Availability. You do not guarantee that any media will be available to me at a particular time. Access to the websites may be limited or unavailable during periods of peak demand, market volatility, system upgrades, or other reasons.

You reserve the right to suspend and deny access to the Services, without prior notice or for any reason. I recognize that Account activity may be conducted through several different media (for example, Interactive Voice Response phone system [IVR] and phone); and if a certain medium is not available, I will use another medium to conduct Account activity. You will not be liable for the unavailability, delay, or failure of any of the media at any particular time or for the accessibility of, transmission quality, outages to, or malfunction of any telephone circuits, computer system, or software.

b. Use of Services. I will use the Services for lawful purposes, for my personal and noncommercial use, and as permitted by this Agreement. I will not transmit through the websites any material that violates or infringes in any way upon the rights of others or would encourage conduct that may give rise to civil or criminal liability. I will not modify, copy, publish, transmit, license, participate in the transfer or sale of, reproduce, create derivative works from, distribute, redistribute, display, or in any way exploit the Services. I will not upload, post, decompile, reverse engineer, disassemble, modify, copy, distribute, transmit, reproduce, republish, license, display, sell or transfer, or create derivative products from the Services. Software accessed on the websites is subject to U.S. export controls and may not be downloaded by any person prohibited from doing so by Applicable Rules.

I may download software on a single computer for personal, noncommercial use, provided I keep intact all copyright and other proprietary notices. You and Third-Party Providers reserve the right to revise, modify, change, upgrade, suspend, impose limitations or restrictions on, deny access to, remove, or discontinue the Services at any time without prior notice. Third-Party Providers may enforce this Agreement against me and take action against me for my breach of this Agreement. I further acknowledge that I am subject to any agreements for the receipt and use of real time market data as distributed by the Securities Information Processors, such as those agreements governing subscriber use published at CTAPlan.com.

c. Limitation of Liability. The Services are provided "as is" and "as available." You, your affiliates, the Third-Party Providers and their respective licensors, employees, distributors, or agents make no representations with respect to the system and expressly disclaim all warranties. Subject to Applicable Rules, in no event will you, your affiliates, the Third-Party Providers or their respective licensors, employees, distributors, or agents be liable to me or any third party for any direct, indirect, incidental, special, punitive, or consequential losses or damages of any kind with respect to the Services.

I am solely responsible for my investment research, and neither you nor any Third-Party Provider make any representations, warranties, or other guarantees as to the accuracy or timeliness of any market data; nor do you or any Third-Party Provider make any representations, warranties, or other guarantees as to the present or future value or suitability of any sale, trade, or other transaction involving any particular security or any other investment.

d. Intellectual Property. My use of the Services will not confer any title, ownership interest, or intellectual property rights to me. The Services are protected under U.S. patent, copyright laws, international treaties or conventions and other laws, and will remain the exclusive property of you or Third-Party Providers. Company names, logos, and all related product and service names, design marks, and slogans of you or your affiliates or any Third-Party Provider are the property of the respective company. I am not authorized to use any such name or mark in any advertising, for publicity, or in any other commercial manner.

e. Cookies. You use cookies on websites and my browser will need to accept all cookies for it to perform fully. Certain features of the websites may also require the acceptance of cookies.

f. Hyperlinks. The websites may include hyperlinks to websites, owned or operated by affiliated or unaffiliated third parties. Neither you nor Third-Party Providers are responsible for the content or availability of such other websites, and shall not be responsible or liable for any loss in connection with reliance on such sites.

8. BROKERAGE SERVICES

a. Order Routing and Executions. Unless I specify the market for execution, you decide where to route my orders for execution. You consider a wide variety of factors in determining where to direct my orders, such as execution price, opportunities for price improvement (which is when an order is executed at a price that is more favorable than the displayed national best bid or offer), market depth, order size and trading characteristics of the security, efficient and reliable order handling systems and market center service levels, speed, efficiency, accuracy of executions, and the cost of executing orders at a market. If I instruct you to route my order to a particular market for execution ("Direct Routing"), and you accept my order and instruction, you are not required to make a best execution determination beyond executing the order promptly and in accordance with the terms of my order. Instructions to direct my order to certain market centers could incur additional fees.

b. Deposit and Order Refusal; Account Restrictions. You reserve the right not to accept the deposit of funds or particular securities into my Account and may refuse any of my orders. You also reserve the right to place trading, disbursement, and other restrictions on my Account. You may restrict my Account from withdrawals or trading if there is a reasonable suspicion of fraud, diminished capacity, inappropriate activity, or if you receive reasonable notice that the ownership of some or all of the assets in my Account is in dispute. I will not hold you liable for any loss I may incur due to your refusal to permit any deposit, withdrawal, or transaction.

c. Trade Execution and Price. You route orders to markets for prompt execution in view of prevailing market conditions, but there can be delays in the processing of orders. I understand and agree with the following:

- The quoted price may not reflect the trading activity from all markets.
- High volumes of trading at the market open or intraday may cause delays in executions and result in prices significantly different from the price quoted at the time the order was entered.
- Markets may handle orders manually and may reduce size guarantees during periods of volatility, resulting in possible delays in order execution, and losses.
- The execution price I receive may be impacted by numerous factors beyond your control and responsibility, including the type of security, liquidity, and the size of my order. For example, large or "block" orders or orders involving illiquid securities may take additional time to execute and may execute at prices significantly different from the quoted price.
- The execution of market and stop-market orders may be at a price significantly different from the quoted price of that security. Limit orders will be executed only at a specified price or better, but there is the possibility that the order will not be executed.
- Securities traded in over-the-counter bulletin board and pink sheet securities and other thinly traded securities present particular trading risks in that they are often more volatile and generally less liquid than securities traded on exchanges. You reserve the right to place restrictions on the trading of such securities without prior notice.
- I may suffer market losses during periods of volatility in the price and volume of a particular stock when systems issues result in an inability to place buy or sell orders.

d. Payment for Order Flow. You may receive remuneration from markets for directing orders to them. The source and amount of these payments are available upon written request. Markets may act as principals to buy, sell or hold securities for their own accounts, and they may make money when executing your trade.

e. Payment for Transactions. All orders that I authorize will be processed with the understanding that I will pay for any purchase and deliver certificates to cover all sales on or before the settlement date. All sell orders that I place will be for securities that I own ("long") and in deliverable form at the time I place the order, unless I inform you otherwise.

You reserve the right to require full payment, or an acceptable equity deposit, prior to the acceptance of any order. I will have the required cash, available funds, or equity in my Account prior to the execution and/or settlement of a purchase or short sale transaction, and the required securities in my Account prior to the execution and/or settlement of a long sale. If I do not have sufficient funds or securities in my Account, you have the right to liquidate or buy in securities at my expense, and I will be responsible for any cost or loss.

f. Payment of Indebtedness Upon Demand. If I incur and indebtedness in an account held with one of your affiliates, such as TD Ameritrade Futures & Forex LLC, I understand and acknowledge that you and your affiliates may decide to transfer my indebtedness to my Account. Subject to Applicable Law, I will be liable for the payment upon your demand of any obligations owing in my Account, including the reasonable costs incurred in collecting such amounts.

g. Security for Indebtedness. I consent to you having a continuing security interest in, right of set-off to and lien on all securities, cash, investment property, and other property in my Account ("Collateral"). Subject to Applicable Rules, and without prior notice to me, you may sell or transfer the Collateral to satisfy my obligations. You also have the discretion to determine which securities and other properties are to be sold and which contracts are to be closed. You have all the rights of a secured party under the Uniform Commercial Code.

h. Short Sales. I will designate any sell order as a "short" sale if at the time I place the order I do not own the security I intend to sell or am unable to deliver the security before settlement. All short sales will be executed in a Margin Account.

i. Mutual Funds and ETFs. I authorize you to custody mutual fund holdings that I purchase directly through you. When purchasing a mutual fund, I acknowledge that I have received and read the fund prospectus. Mutual fund purchases may be subject to investment minimums, eligibility and other restrictions, as well as charges and expenses. Certain money market funds may impose liquidity fees and redemption gates in certain circumstances.

Some mutual funds sold through you impose a charge on the purchase of shares, called a "sales load." I may be able to purchase mutual fund shares through you without paying a front-end sales load, but I may be charged a fee, called a "contingent deferred sales charge," when I sell or redeem my shares. You may receive part or the entire sales load.

As discussed in the prospectus, some mutual funds agree to waive or reduce front-end sales loads for purchases over certain amounts. I am responsible for determining and obtaining any waivers, breakpoints, or providing you with sufficient information to assist me in obtaining such.

You may receive remuneration from fund companies, including, those participating in your no-load, no-transaction-fee program, for record-keeping, shareholder services, and other administrative and distribution services. The amount of your remuneration for these services is based in part on the amount of investments in such funds by your clients. Some mutual funds impose a distribution or service fee known as a "12b-1 fee." You may receive the 12b-1 fees in connection with my investment in such fund's shares. If I invest online in no-transaction-fee mutual funds ("NTF funds") directly through you, I will not pay a transaction fee. I also may be able to purchase mutual funds directly from the fund's distributor or underwriter without incurring a transaction fee. You receive remuneration from fund companies participating in the NTF fund program. NTF funds have other fees and expenses that apply to continued investment in the fund that are described in the prospectus. TD Ameritrade receives remuneration from certain ETFs (exchange-traded funds) that participate in commission-free ETF program for shareholder, administrative, and other services.

j. Sweep Program. My available cash may be swept into a sweep vehicle pending investment of the cash. The alternatives available under the Sweep Program are referred to as "Sweep Choices," and the one I select is referred to as the "Designated Sweep Vehicle." You will notify me of the Sweep Choices and the Designated Sweep Vehicle. I agree that at account opening my Designated Sweep Vehicle will be the TD Ameritrade FDIC Insured Deposit Account (described below), unless I select a different Sweep Choice.

Cash will be automatically invested or deposited in the Designated Sweep Vehicle, according to a sweep schedule determined by you. Proceeds from the sale of securities will be swept into the Designated Sweep Vehicle following settlement if the securities sold have been received in good deliverable form by the settlement date. The proceeds of any checks that I deposit to my Account will be swept to the Designated Sweep Vehicle on the Business Day after receipt by you and will begin earning dividends or interest on that day. Access to such funds may be withheld for up to four Business Days to assure that such checks have not been returned unpaid. I may instruct you to change my Designated Sweep Vehicle at any time to another of the Sweep Choices, and acknowledge that such instruction shall constitute my authorization to liquidate balances in my Designated Sweep Vehicle and transfer such balances to the new Designated Sweep Vehicle. I authorize you to automatically withdraw cash or redeem securities maintained in a Designated Sweep Vehicle to satisfy my obligations. I authorize you to act as my agent to purchase and redeem balances in the Designated Sweep Vehicles, and authorize you to select and use agents as you deem appropriate.

The Sweep Choices may include money market funds or an FDIC-insured deposit account ("IDA") for which you or your affiliates receive, to the extent permitted by Applicable Rules, transaction, and other fees for providing services. These fees will vary depending on the money market fund (or share class) or IDA used. No portion of these fees will reduce or offset the fees otherwise due to you unless required by Applicable Rules.

There may be certain minimum requirements for initial and subsequent investments in the Designated Sweep Vehicles. You may change the eligibility criteria or replace the Sweep Choices available to me. You will give me advance notice of any such change in Sweep Choices. Unless I notify you of an objection to such change, I authorize you to withdraw cash or redeem securities held in the prior Designated Sweep Vehicle and to invest or deposit the proceeds in the replacement Designated Sweep Vehicle.

If my Designated Sweep Vehicle is a money market fund or IDA, and my Account is flagged as a "Pattern Day Trader," on the next Business Day, you may change my Designated Sweep Vehicle to TD Ameritrade Cash (described below).

- 1. TD Ameritrade FDIC Insured Deposit Account.** If the IDA is my Designated Sweep Vehicle, the available cash in my Account will be automatically deposited into an IDA at one or more banks ("Program Banks"). Three of the Program Banks are Charles Schwab Bank, SSB; Charles Schwab Premier Bank, SSB; and Charles Schwab Trust Bank, each an affiliate of you. You will maintain a list of the current Program Banks on your website. The IDAs at the Program Banks are savings or checking accounts held in the name of Clearing as agent for its customers. You have arranged the IDAs and account records in such a way that "pass through" FDIC insurance is available to me as if I had opened the IDAs directly with a Program Bank in my own name. As a result, my funds at each Program Bank will be eligible for FDIC insurance in an amount equal to \$250,000 for principal and accrued interest per depositor in each recognized legal capacity (for example, Individual, Joint, IRA). The bank sweep program has been structured to provide me with access to at least two Program Banks resulting in up to \$500,000 in FDIC insurance per depositor in each recognized legal capacity (for example, up to \$500,000 for individual accounts and \$1,000,000 for joint accounts). Subject to deposit limits pursuant to agreements with the Program Banks, to the extent that my cash is being deposited into more than two Program Banks, it is possible for me to obtain total FDIC insurance in excess of \$500,000 per depositor in each recognized legal capacity. In addition, you will determine the order of the Program Banks in the IDA for the purposes of accepting deposits based on several factors including, but not limited to, minimum and maximum deposit balances agreed to with a particular Program Bank and the contractual arrangement between you and a particular Program Bank. Such FDIC insurance will cover my money in each IDA, together with any other deposits held at each Program Bank in the same legal capacity (for example, Individual, Joint, IRA). Questions about FDIC insurance coverage may be directed to you. Information also may be obtained by contacting the FDIC, by letter (550 17th Street NW, Washington, D.C. 20429), by phone (877-275-3342, 800-925-4618 ([TTY])), by email (dcainternet@fdic.gov), or by accessing the FDIC website at fdic.gov. Learn more about FDIC coverage by using the FDIC's Electronic Deposit Insurance Estimator at edie.fdic.gov/.

My available cash will be deposited into an IDA at one or more Program Banks. You will deposit up to \$247,500 in the Program Banks, per depositor per legal capacity, except for "the Excess Bank" which will receive deposits without limit, even if the amount in the IDA exceeds the FDIC insurance available to me. The list of Program Banks including "the Excess Bank" is included on your website at tdameritrade.com/idaprogrambanks. Any deposits (including certificates of deposit) that I maintain in the same insurable capacity directly with a Program Bank, or through an intermediary (such as you or another broker), will be aggregated with deposits in my IDA at such Program Bank for purposes of determining my maximum FDIC insurance amount. I am responsible for monitoring the total amount of deposits that I maintain at the Program Banks in order to determine the extent of FDIC coverage available to me. I acknowledge that the IDAs constitute an obligation of the Program Banks and are not your obligation. I can obtain publicly available financial information concerning each Program Bank at www.fdic.gov/news/publications/pichardcopies.html or by contacting the FDIC Public Information center by mail at L. William Seidman Center, Virginia Square, 3501 North Fairfax Drive, Arlington, VA 22226 or by phone at 703-562-2200. You do not guarantee in any way the financial condition of the Program Banks or the accuracy of any publicly available financial information concerning the Program Banks. You will not be responsible for any insured or uninsured portion of the IDAs. Cash in my Account will be automatically swept on a daily basis to the IDAs at the Program Banks. As required by federal regulations, the Program Banks have the right to require seven days' prior notice before permitting a withdrawal out of a savings account. Currently, the Program Banks do not intend to exercise this right. In addition, savings accounts you hold as agent for me at a Program Bank may have transfer limits that prevent using such accounts as a transaction account. The following applies to the IDAs:

- When available cash is available for deposit, you will deposit available cash from my Account into an IDA at one or more Program Banks. You will periodically rebalance my IDAs so the total amount of my funds in the IDA at Program Banks remains below applicable FDIC insurance limits (except for the Excess Bank, which has no limit).
- All withdrawals necessary to satisfy debits in my Account will be made by Clearing, as my agent. A debit will be created when I purchase securities or request a withdrawal of funds from my Account.
- My account statement will display the name of each Program Bank with which I have deposits, the balance of deposits at each Program Bank, any withdrawals made during the month, and the applicable interest rate and amount of interest earned on my deposits.
- The deposit limit at the Program Banks is set slightly below FDIC-insurance thresholds to allow for accrued interest on deposits. The deposit limit at the Program Banks is set at \$247,500 (\$495,000 for Joint Accounts), which may be reset from time to time based on FDIC-insurance limits and the interest rate environment. If interest paid on my funds in the IDA at one of the Program Banks results in my total funds in the IDA exceeding the deposit limit at another Program Bank, the IDAs will be rebalanced the next day and the amounts in excess of the deposit limit will be transferred to another Program Bank.
- I may not change the Program Banks, the order in which funds are deposited into the Program Banks, or the maximum deposit amount at any Program Bank. I may withdraw from the bank sweep program at any time and use another Sweep Choice.
- I will earn interest on my deposits in the IDAs in accordance with the rates or tiered rates available to me as determined by you. I understand that rates may vary based on the particular offering or the level of my assets held with you. Interest rates earned in the IDAs will vary over time, but will be paid consistent with the rate or tiered rate you make available to me regardless of which Program Bank holds my cash. The interest rates paid with respect to the IDAs may be higher or lower than the interest rates available to depositors making deposits directly with the Program Banks or other depository institutions in comparable accounts. The current interest rate will be available on the websites, or I may contact you to obtain the current rate. Interest will accrue on balances from the day they are deposited into the IDAs through the Business Day preceding the date of withdrawal from the IDA. Interest will be accrued daily and credited on the last Business Day of each month. You use the daily balance method to calculate interest on my Account.
- Clearing will act as my agent in depositing funds into the IDAs and withdrawing funds from the IDAs. No evidence of the IDAs, such as a passbook or certificate, will be issued to me. Ownership of the IDAs at the Program Banks will be evidenced by a book entry on the records of the Program Banks, and by records maintained by Clearing. I will contact you if I believe there has been any unauthorized activity between my Account and the IDAs, or if I have any complaints regarding the IDAs at the Program Banks.
- You may terminate my use of the IDA sweep feature. If you terminate my use of the IDA sweep feature, or do not wish to continue to act as my agent with respect to the IDA, I may deal directly with the Program Banks, subject to their rules, with respect to establishing and maintaining deposit accounts. In the event you terminate my use of the IDA sweep feature, you will inform me of the replacement Sweep Choice. Similarly, if I decide to terminate my use of the IDA sweep feature, or that I no longer wish to have Clearing act as my agent with respect to the IDAs, I may establish a direct depository relationship with the Program Banks, subject to the Program Banks' rules. Establishing a direct depository relationship with the Program Banks will result in the separation of my deposit balances at the Program Banks from my Account.
- The Program Banks use IDA balances to fund current and new investment and lending activity. The Program Banks seek to make a profit by achieving a positive spread between their cost of funds (for example, deposits) and the return on their assets, net of expenses. You receive a volume-based fee from the Program Banks that are not affiliated with TD Ameritrade that ranges from 0.85 to 1.20%. In the case of Program Banks that are affiliates, you will receive a fee of up to \$100 per account. You have the right to waive all or part of this fee. The rate of the fee that you receive may exceed the interest rate or effective yield that I receive in my balances in the IDAs, and the payment of the fee reduces the yield that I receive. Other than the applicable fees charged on brokerage accounts, there will be no charges, fees, or commissions imposed on my Account for this Sweep Choice. The current IDA interest rate will be disclosed on your website and may be changed without prior notice.
- My deposit into IDAs at the Program Banks may need to be limited if one or more Program Banks stop accepting deposits. You will provide advance notification via the website, or other reasonable means, if any Program Bank is removed from the bank sweep program, and if advance notice is not practicable, you will notify me as soon as is reasonably practicable. If a Program Bank ceases to make its IDA available through the IDA sweep feature, I will be given an opportunity to establish a direct relationship with that Program Bank outside of the IDA sweep feature, or to transfer funds to another Program Bank participating in the IDA sweep feature, if available.
- In the event that FDIC insurance payments become necessary, the FDIC is required to pay principal plus unpaid and accrued interest to the date of the closing of the relevant Program Bank, as prescribed by applicable laws and regulations. Because there is no specific time period during which the FDIC must make available such insurable payments, I should be prepared for the possibility of an indeterminate delay in obtaining insurable payments. In addition, I may be required to provide certain documentation to the FDIC and you, such as affidavits and indemnities, before any insurance payouts are released to me. For example, if the IDA balances are held by me as trustee for the benefit of trust participants, I may be required to furnish an affidavit to that effect.
- You may change the bank sweep program terms and conditions by providing me 30 days' advance notice.

2. **TD Ameritrade Cash.** If I selected TD Ameritrade Cash as my Designated Sweep Vehicle, you will pay interest on available cash in my Account, the rate of which may be changed without prior notice. Interest will be accrued daily and credited on the last Business Day of each month. You may vary interest rates among clients in connection with special offers or combinations of services or in other circumstances. TD Ameritrade Cash represents balances pending investment and is not maintained solely for receiving credit interest. You segregate customer cash consistent with the Securities and Exchange Commission rules and regulations.
3. **Money Market Funds.** Investments in money market funds are subject to eligibility and other restrictions, as well as charges, and expenses, all as further described in the prospectus. Money market funds are securities that may increase or decrease in value. They are not insured or guaranteed by the FDIC, any other government agency, or you, and there can be no assurance that such funds will be able to maintain a stable net asset value of \$1 per share. I understand that I will receive period statements for sweep transactions involving money market funds in lieu of immediate confirmations.

k. Callable Securities. I consent to your lottery system for allocation of partial redemption or calls. A description of your procedures for callable securities is available on your website, or hard copies are available upon request.

9. MARGIN TRADING

a. Margin Account. When I purchase securities on margin, I am borrowing money from you and pledging all securities and other property in my Account as collateral for these loans. I agree to evaluate my own financial situation, resources, investment objectives, and other relevant circumstances to determine whether margin transactions are appropriate for me. You will not make this determination. Even if I determine that margin is appropriate for me, you determine whether to make such loans to me. I also understand that trading securities on margin involves a variety of risks, including the following:

1. **I can lose more funds than I deposit in the margin Account.** A decline in the value of securities that I purchase on margin may require me to provide additional funds to you to avoid the forced sale of those securities or other securities or assets in my Account. I could lose more than the amount I deposit in my Account.
2. **You can force the sale of securities or other assets in my Account.** If the equity in my Account falls below the maintenance margin requirement, or any higher "house" requirements, you can sell the securities or other assets in any of my Accounts to cover the margin deficiency. I also will be responsible for any shortfall in the Account after such a sale.
3. **You can sell my securities or other assets without contacting me.** Some investors mistakenly believe that a firm must contact them for a margin call to be valid, and that the firm cannot liquidate securities or other assets in their accounts to meet the call unless the firm has contacted them first. This is not the case. Although you may attempt to notify me of margin calls, you are not required to do so, and even if you have contacted me and provided a specific date by which I can meet a margin call, you can still take necessary steps to protect your financial interests, including immediately selling securities without notice to me.
4. **I am not entitled to choose which securities or other assets in my Account are liquidated or sold to meet a margin call.** Because the securities are collateral for my margin loan, you have the right to decide which securities to sell in order to protect your interests.
5. **You can increase your "house" maintenance margin requirements at any time, and you are not required to provide me advance written notice of the change.** These changes to your policy often take effect immediately and may result in the issuance of a maintenance margin call. My failure to satisfy the call may cause you to liquidate or sell securities in my Account.
6. **I am not entitled to an extension of time on a margin call.** While an extension of time to meet margin requirements may be available to clients under certain conditions, I do not have a right to any extension. You will determine whether to provide an extension.

b. Initial Margin and Margin Maintenance Requirements. There are rules and regulations covering margin loans, including the initial and margin maintenance requirements for margin Accounts. You may impose more stringent margin requirements, which may change without notice to me.

To trade on margin, my Account must maintain at least \$2,000 in minimum equity. I will meet the margin requirement in my margin Account before entering any order and will satisfy any additional requirements you may require. You may apply all premiums received from options writing against my margin requirements. I have the obligation to monitor the balances in my margin Account to ensure that I maintain sufficient amounts to meet margin requirements at all times. I agree to read carefully the TD Ameritrade Margin Handbook before purchasing securities on margin.

You may decline to extend credit to me for any reason, subject to Applicable Rules. There may be times when you have extended credit on certain securities, but due to market or other conditions, you may require additional cash or securities.

c. Margin Interest. I will pay interest on any credit provided to me for the purpose of purchasing, carrying, or trading in any security.

d. Margin Interest Rates. You utilize a base rate ("Base Rate") to set margin interest rates. My margin interest rate will vary based on the Base Rate and the margin balance ("Balance") in my margin Account during the interest period. The Base Rate may be changed without prior notice to me. You will post on the websites any changes to the Base Rate.

e. Interest Calculation. For each day there is a debit balance in my Account, the interest charged for that day is calculated by multiplying the applicable interest rate by my debit balance, with the result divided by 360. The sum of the daily interest charges is totaled at the end of each Account statement period and is posted to my Account on the last Business Day of the Account statement period. I will not earn interest on credit balances in my short Account.

f. Short Sales. Sales designated as "short" are done in my margin Account, and are subject to different margin maintenance requirements than securities purchased on margin. Short sales are subject to certain regulatory rules and cannot be executed under certain market conditions. You may not always have the securities available to facilitate my short sale. You may, without notice, "buy-in" securities to cover any short security position in my Account. I will reimburse you for any losses that you may incur. You may require me to deposit Collateral if the Collateral in my Account becomes insufficient. Short sale proceeds are part of the Collateral that secures your loan to me. I am also liable for all dividends paid, and all other distributions of cash or property, on securities that I have sold short.

g. Pledge of Securities and Other Property. You may pledge, repledge, hypothecate, or re-hypothecate, without notice to me, all securities and other property that you hold, carry, or maintain or for any of my margin or short Accounts. You may do so without retaining in your possession or under your control for delivery the same amount of similar securities or other property. The value of the securities and other property that you may pledge, repledge, hypothecate, or re-hypothecate may be greater than the amount I owe you, and any losses, gains, or compensation that result from these activities will not accrue to my Account.

h. Loan of Securities. You are authorized to lend to yourself or others any securities you hold in my Account and to carry all securities lent as general loans. In connection with such loans, you may receive compensation and retain certain benefits that I will not be entitled to, such as interest on Collateral posted for such loans. In certain circumstances, such loans may limit my ability to exercise voting rights with respect to the securities lent. I may request that fully paid securities not be used in connection with short sales. I understand that in certain situations in which you have borrowed my securities, I may receive a "payment in lieu" of the dividend issued (see Margin Handbook for more details).

10. OPTIONS TRADING

If I elect to engage in options transactions, I will be bound by the following additional terms:

a. Suitability. Options are not suitable for all investors. Options trading has inherent risks and I am prepared financially to undertake such risks and to withstand the losses that may be incurred. I acknowledge I have received or have been given access to the "Characteristics and Risks of Standardized Options" by the Options Clearing Corporation (OCC).

b. General Terms.

- I am responsible for knowing the rights and terms of all options in my Account. I agree to be bound by the FINRA, OCC, and exchange rules applicable to the trading of options contracts.
- If my options trading occurs in a margin Account, it is subject to the terms and conditions applicable to margin trading.
- Settlement on options cleared through the OCC is the Business Day after the trade date. I shall not exceed the position and exercise limits imposed by the rules of the OCC.
- I am responsible for instructing you as to my intention to exercise options contracts before the expiration date. Absent proper and timely exercise instructions from me, you have no obligation to exercise any right, privilege or obligation of any option for my Account. I agree that my failure to provide you with proper and timely instructions may result in the option expiring worthless, even though it may have a monetary value on the expiration date. I agree to read carefully the Margin Handbook for additional terms and important information regarding options exercise.
- You collect information only to establish option trading permission and not for the purpose of monitoring Account holdings or option positions.
- You and Clearing are authorized to take steps to protect their position and any obligation they have assumed at my request without notifying me.
- If I write (short) a call options contract that requires the delivery of securities to be sold, I may be required to keep the securities in my Account until the expiration of the options period and may not be allowed to sell or withdraw the securities.
- If I write (short) a put options contract that requires payment for securities to be purchased, I may be required to keep sufficient funds in my Account to make the payment until the expiration of the options period, and may not be allowed to withdraw the funds or use them for any other purpose. If I am assigned on the options, Clearing may use the funds for the purchase of the securities without prior notice to me.
- All short equity and some index options positions are available for assignment. Exercise assignment notices for equity or index options are randomly allocated among all clients' short positions.

11. INITIAL PUBLIC AND FOLLOW-UP OFFERINGS

You may participate as underwriter or a member of the selling group of, and provide access to, Initial Public Offerings (IPOs) and follow-up offerings. If I participate in such, I will be bound by additional terms.

12. ARBITRATION

This Agreement contains a predispute arbitration clause. By signing an arbitration clause, the parties agree as follows:

- All parties to this Agreement are giving up their right to sue each other in court, including the right to jury trial, except as provided by the rules of the arbitration forum in which a claim is filed.
- Arbitration awards are generally final and binding; a party's ability to have a court reverse or modify an arbitration award is very limited.
- The ability of the parties to obtain documents, witness statements, and other discovery is generally more limited in arbitration than in court proceedings.
- The arbitrators do not have to explain the reason(s) for their award unless, in an eligible case, a joint request for an explained decision has been submitted by all parties to the panel at least 20 days prior to the first scheduled hearing date.
- The panel of arbitrators may include a minority of arbitrators who were or are affiliated with the securities industry.
- The rules of some arbitration forums may impose time limits for bringing a claim in arbitration. In some cases, a claim that is ineligible for arbitration may be brought in court.
- The rules of the arbitration forum in which the claim is filed, and any amendments thereto, shall be incorporated into this Agreement.
- No person will bring a putative or certified class action to arbitration, nor seek to enforce any predispute arbitration agreement against any person who has initiated in court a putative class action; or who is a member of a putative class who has not opted out of the class with respect to any claims encompassed by the putative class action until: (1) the class certification is denied; (2) the class is decertified; or (3) the client is excluded from the class by the court. Such forbearance to enforce an agreement to arbitrate will not constitute a waiver of any rights under this Agreement except to the extent stated herein.

I agree that any controversy between you and your affiliates, any of their respective officers, directors, employees, or agents and me (including any of my officers, directors, employees, or agents) arising out of or relating to this Agreement, our relationship, any Services provided by you, or the use of the Services, and whether arising before or after the date of this Agreement, shall be arbitrated and conducted under the provisions of the Code of Arbitration of the FINRA. If any party unsuccessfully resists confirmation or enforcement of an arbitration award rendered under this Agreement, then that party shall pay all costs, attorneys' fees, and expenses incurred by the other party or parties in confirming or enforcing the award.

Arbitration must be initiated by service upon the other party of a written demand for arbitration or notice of intention to arbitrate. Judgment, upon any award rendered by the arbitrator, may be entered in any court having jurisdiction.

13. ADVICE

- a. Unless otherwise noted by you in writing, you will act only as broker-dealer and not as an investment advisor governed by the Investment Advisers Act of 1940.
- b. When I act as a self-directed investor, I am responsible for determining the suitability of any particular investment strategy, transaction, or security. You have no responsibility for any such determination unless you otherwise agree in writing, or you or your representative gives advice directly to me that is identified clearly as a recommendation by you to enter into a particular transaction or to buy, sell, or hold a particular security or securities.
- c. From time to time, in connection with my Account, you may provide investment-related guidance or recommendations to me. In the event that a recommendation is made, you and/or your representative shall have my informed consent to deliver the Form CRS Customer Relationship Summary for TD Ameritrade or its affiliates, as required ("Form CRS") - as well as any other notices, disclosures, or communications - to any mailing address, email address or facsimile number that I provide in connection with either the Account, or any other accounts that I open or otherwise maintain with you. I understand that I can also access the Form CRS by visiting tdameritrade.com/regbi. I understand and acknowledge that it is incumbent on me to provide you with current and accurate contact information for the delivery of these documents. I acknowledge that I shall read and understand the Form CRS - as well as any other notices, disclosures, or communications - prior to acting upon any such recommendation. I agree that when you make a recommendation to me, you determine whether it is suitable and in my best interest at the time of the recommendation. If the recommended transaction is not effected contemporaneously with your recommendation, I agree you will have no liability if I choose to effect such transaction in the future. Furthermore, when you are acting as broker-dealer for my Account, I agree that you have no ongoing duty to ensure a recommendation continues to be suitable for me. Rather, I have an affirmative duty to monitor profits and losses in my Account, along with my investment goals and risk tolerance and to modify my trading decisions accordingly.
- d. Unless otherwise agreed to in writing, you do not have discretionary authority over my Account or an obligation to monitor, review or make recommendations for the investment of securities or cash in my Account.
- e. Any research, analysis, news, or other information made available by you does not constitute an individualized recommendation by you to buy, sell, or hold a particular security.
- f. You do not provide legal, tax, or estate planning advice.

14. MISCELLANEOUS

- a. **Severability.** If any provision of this Agreement is held to be illegal, invalid, or unenforceable under present or future laws, such provisions shall be fully severable. In such event: (1) this Agreement shall be construed and enforced as if such illegal, invalid, or unenforceable provision has never comprised a part of this Agreement or was modified to be legal, valid, and enforceable; and (2) the remaining provisions of this Agreement shall remain in full force and effect and shall not be affected by the illegal, invalid, or unenforceable provisions or by its severance from this Agreement, to the extent permitted by Applicable Rules.
- b. **Account Handbook.** The Account Handbook provided to me upon account opening, and available on your websites, contains important information about my Account. I will refer to the Account Handbook to learn additional information about the handling of trade orders, the receipt and delivery of funds, account policies, and other general account information.
- c. **Entirety of Agreement.** This Agreement, any attachments hereto, the addenda and other agreements referred to in this Agreement and the terms and conditions contained in the Account statements and confirmations contain the entire agreement between you and me; and it supersedes all prior or contemporaneous communications and proposals, whether electronic, oral, or written, between me and you, provided, however, any and all other agreements if any, between me and you and your affiliates, not inconsistent with this Agreement will remain in full force and effect, and if there are any conflicts between this Agreement and any attachments or other agreements, this Agreement shall prevail.
- d. **Assignment and Escheatment.** I may not assign this Agreement or any rights or obligations under this Agreement without first obtaining your prior written consent. You may assign, sell, or transfer my Account and this Agreement, or any portion thereof, at any time, without my prior consent. The assets in my Account may be transferred to the appropriate state if no activity occurs in my Account within the time period specified by state law.
- e. **Amendment.** You reserve the right to amend this Agreement without prior notice to me or as required by Applicable Rules. The current version of the Agreement will be posted on the websites and my continued Account activity after such amendment constitutes my agreement to be bound by all amendments to the Agreement, regardless of whether I have actually reviewed them. You are not bound by any verbal statements that seek to amend the Agreement.
- f. **Termination.** You may terminate this Agreement, or close, deactivate, or block access to my Account. If you decide to close my Account and I fail to transfer it to another broker, you may liquidate my Account and send me the proceeds. I will remain responsible for the payment of all obligations incurred in my Account or otherwise. I may terminate this Agreement after paying any obligations owed upon written notice. The Agreement survives termination of the Account.
- g. **Force Majeure.** You will not be liable for loss caused directly or indirectly by conditions beyond your reasonable control, including but not limited to Force Majeure events. "Force Majeure" means events that are beyond the reasonable control of a party, including but not limited to the following: disasters, extraordinary weather conditions, earthquakes or other acts of God, war, insurrection, riot, labor strikes, terrorist acts, government restrictions, exchange or market rulings, suspension of trading, computer or communication line failure, or failure of market centers or transmission facilities.
- h. **Indemnification.** I agree to indemnify and hold harmless you, your affiliates, and Third-Party Providers and your and their respective officers, directors, employees, agents, and representatives from any and all liabilities, losses, costs, judgments, penalties, claims, actions, damages, expenses, or attorney's fees (collectively "Losses") resulting or arising directly or indirectly from use of the Services or transactions in my Account, except to the extent that such Losses are the direct result of your gross negligence or willful misconduct.
- i. **Waiver.** Your failure to insist on compliance with this Agreement will not constitute a waiver of any of its rights.
- j. **Admissibility of Documents in Proceedings.** All documents in any format are considered to be true, complete, valid, authentic, and enforceable records of the applicable document, admissible in judicial or administrative proceedings to the same extent as if the documents and records were originally generated and maintained in printed form. I will not contest the admissibility or enforceability of your copy of the documents in any proceeding arising out of this Agreement.
- k. **Governing Law, Jurisdiction, and Venue.** This Agreement will be governed by the laws of the State of Nebraska, but not its conflicts of law provisions. I hereby consent to the jurisdiction of and venue within the State of Nebraska for all disputes arising out of or relating to this Agreement.

I. NJ State Law. New Jersey law prohibits contractual provisions that violate the legal rights of a NJ consumer or responsibility of a seller. No provision in this Agreement shall apply to any NJ consumer if it violates any such right or responsibility, including grounds for redress based on: (i) your tortious actions; (ii) the NJ Punitive Damages Act; (iii) the NJ Uniform Commercial Code; or (iv) your failure to protect reasonably against criminal acts of third parties.

m. Worthless Securities. You may remove a worthless security from my account including, and without limitation to, the following circumstance: your primary custodian, the Depository Trust Company, has deemed the security eligible for removal and you have reviewed and determined, to the best of your ability, that the security has no market value. I agree to waive any claim to any future distribution from the security and agree to indemnify and hold you harmless from any claims, liability, or damages resulting from the removal of such security. If I provide you with evidence of the value of the security from an independent third party within 60 days of receiving your account statement noting the removal, you will review and, if able to, reinstate my position.

Investment Products: Not FDIC Insured * No Bank Guarantee * May Lose Value

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